Alienware X2 motherboard

User's Manual

Chapter 1: General specifications

1.1 Specifications summary

CPU	Support for Dual Intel ® Xeon processor on 604 Socket 800 MHz System Bus Supports Intel ® EMT64 Technology Supports Enhanced Intel ® SpeedStep Technology Supports Intel ® Hyper-Threading Technology Supports SIMD Extensions 3 (SSE3)
CPU power	Complies with VRM 10.1 voltage requirements Dual EVRD Support FMB 1.5
Chipset	Intel ® E7525 Northbridge Intel ® 6300ESB Southbridge Silicon Image 3114 SATA Controller Super IO: 83627THF
Memory	Support for dual channel DDR2 400 MHz registered DIMM ECC or non-ECC
Expansion slots	One x16 PCI Express slot One x8 PCI Express slot Three PCI slots
SATA	Two SATA ports that support RAID 0, 1 through Adaptec Host Raid controller Four SATA ports that support RAID 0, 1, 0+1 through Silicon Image Sil3114 controller
LAN	Intel ® Pro 1000 onboard controller
USB	NEC UPD720101 USB 2.0 controller Four USB 2.0 external ports Two USB 2.0 internal headers for four front panel ports
Audio	5.1 channel AC'97 onboard sound Support for S/PDIF out at the rear panel Support for CD-ROM audio in through internal 4-pin header

IEEE-1394	TI TSB43AB23 IEEE-1394 controller Two internal pin headers for front panel IEEE-1394 ports One external IEEE-1394 port at the back panel
Internal I/O	Two IDE connectors with support for UltraDMA 33/ATA66/ATA100 IDE drives and ATAPI compliant devices One Floppy connector for up to two drives One UART 16550 9-pin header One Smbus connector One WOL connector One pin header for IR
External I/O	One PS/2 keyboard connector One PS/2 mouse connector One 25 pin parallel port with ECP/EPP support One UART 16550 serial port (COM1) Four USB 2.0 ports One LAN RJ-45 port One 1394 port One SPDIF port Rear out and center out audio outputs Line in, line out, and mic in audio jacks
System management	Hardware monitor control by Winbond W83627THF Two 3/4-pin CPU fan connectors with fan speed monitor, control Two 3-pin system fan connectors with fan speed monitor, control CPU Voltage monitor CPU Temperature monitor
BIOS	AMI BIOS Flash write protection by BIOS and jumper settings ACPI 1.1 APM 1.2 Support ASF 2.0

1.2 Motherboard features

Intel ® Xeon Dual processor platform
The Intel ® Xeon processors are built on 90 nm manufacturing process. These processors support new technological advances such as EMT64, Enhanced Intel ® SpeedStep Technology and Hyper-Threading technology. The Alienware X2 motherboard is designed to house one or two of these processors.

The Intel ® SpeedStep technology along with the DMS (Demand Base Switching) will allow the processor to dynamically adjust the processor's power demand according to how much work it has to do.

The Hyper-Threading improves the performance of multithreaded applications providing a higher processing throughput.

The Intel ® EMT 64 instruction enables the usage of 64-bit operating systems, allowing the system to detect larger amounts of memory.

PCI Express graphics
This motherboard features the next generation graphics interface which supports the latest PCI Express video cards with a 4.0 GB bandwidth. The Alienware X2 motherboard offers two SLI-capable PCI Express slots.

Dual DDR2 400 memory channels
DDR2 memory provides a fast data transfer rate, acquiring a maximum memory bandwidth of 3.2 GB per second. The power consumption on DDR2 technology decreases significantly since it uses a 1.8V core voltage (versus the 2.5V on DDR).

Serial ATA
Support for SATA hard disk drives permits using advances such as hot swappable drives and native command queueing technology, plus easier to handle cabling and connectors to facilitate removal and installation of more drives.

Intel ® audio
Integrated Audio Controller supports 5.1 channel configuration to provide excellent sound quality output either through the built in jacks or the SPDIF output.

USB 2.0
High speed data transfer is enabled through the USB 2.0 ports on this motherboard, which provide a faster 480 Mbps transfer rate than the previous USB 1.1 (12 Mbps). USB 2.0 ports are backward compatible with USB 1.1.

IEEE 1394a
This motherboard enables a connection to high speed data transfer devices through the 1394a connection. Even though data range goes up to 400 Mbps, 1394a provides a faster connection than USB due to the peer to peer architecture which guarantees more reliable and sustained throughput rate.

S/PDIF
This motherboard facilitates connectivity to the most advanced stereo components through the S/PDIF port, giving high quality audio.

Chapter 2: Hardware information

2.1 Board overview

2.1.1 The board
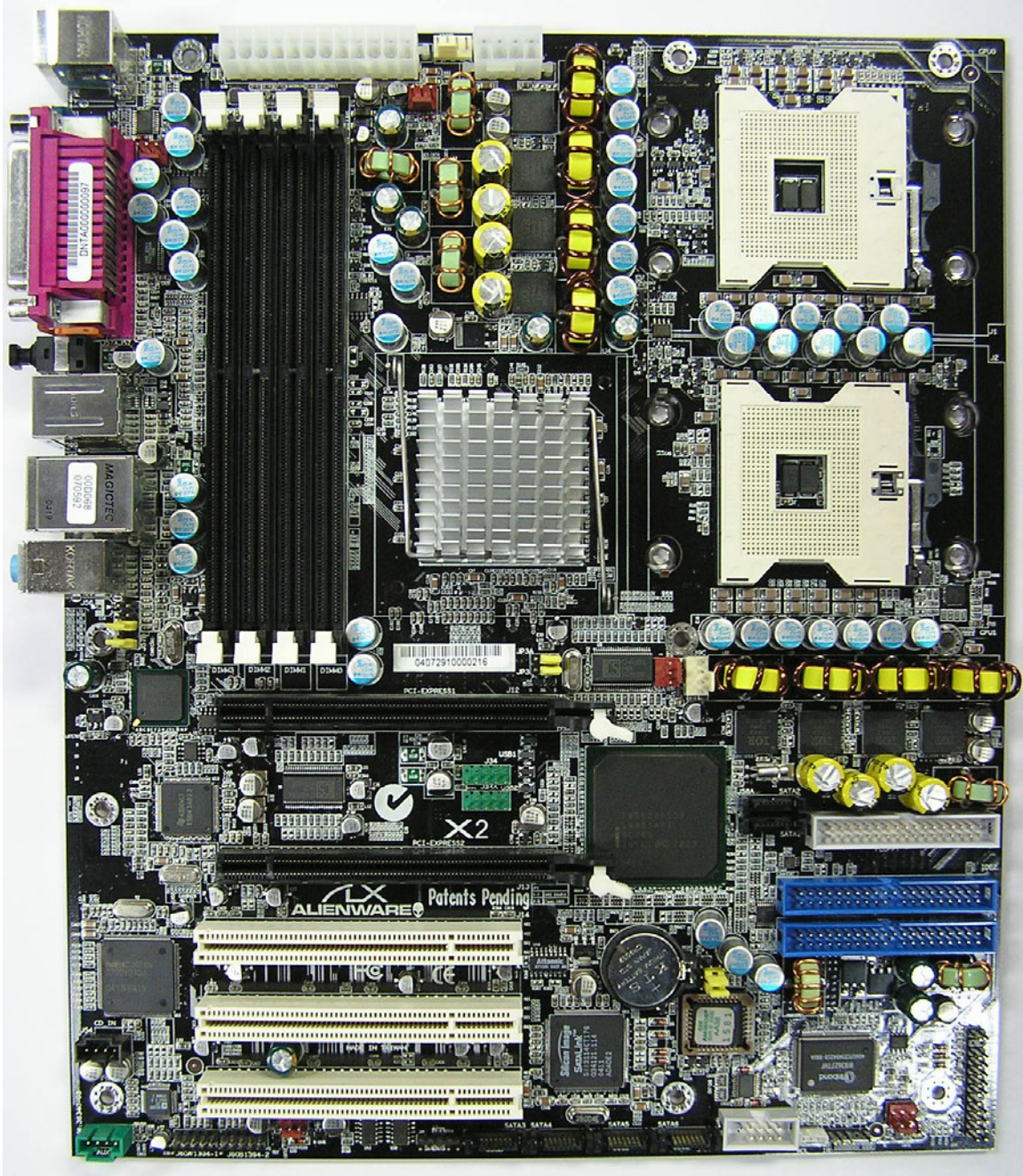
2.1.2 MB diagram
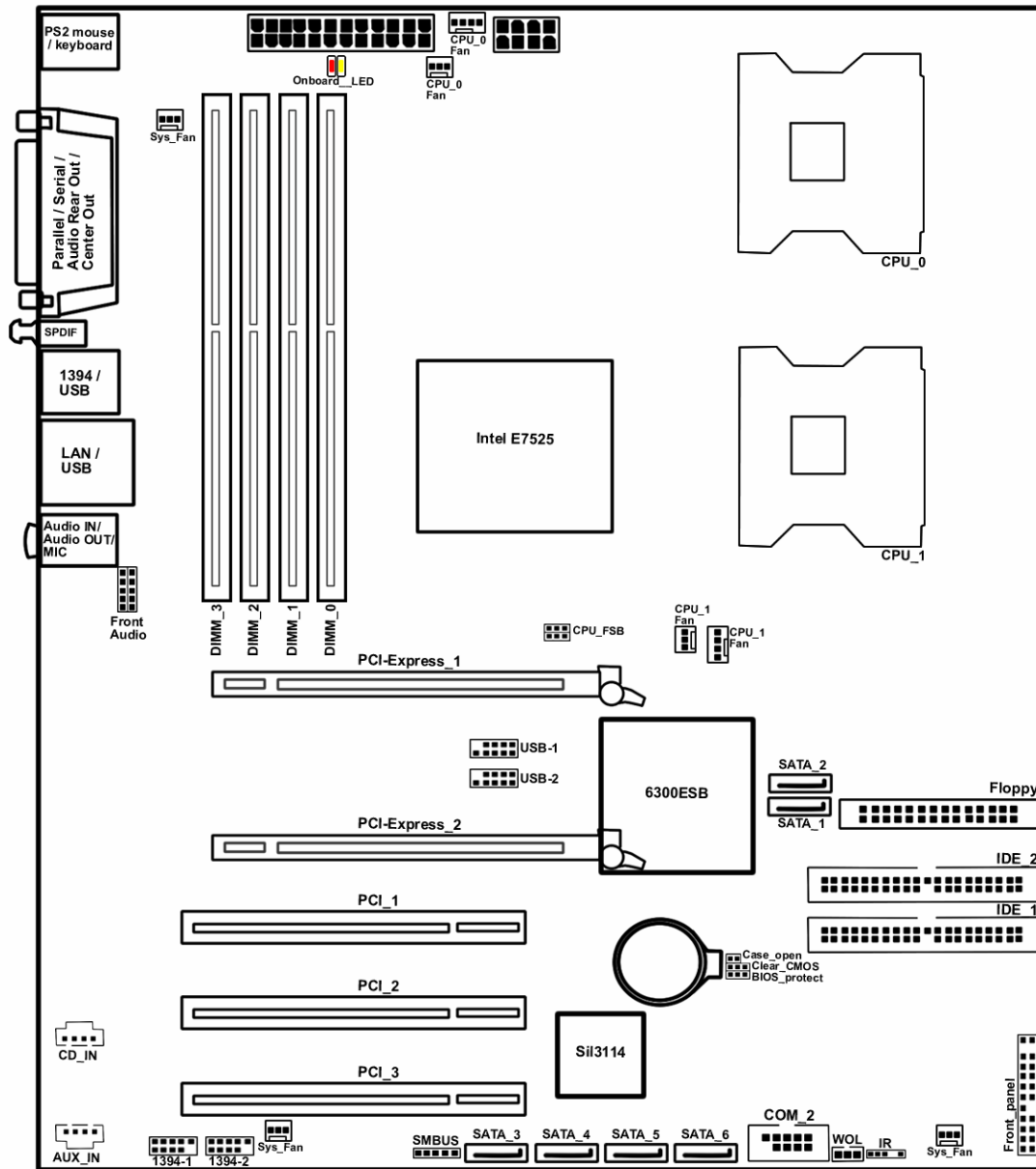
2.1.3 Ports and connectors
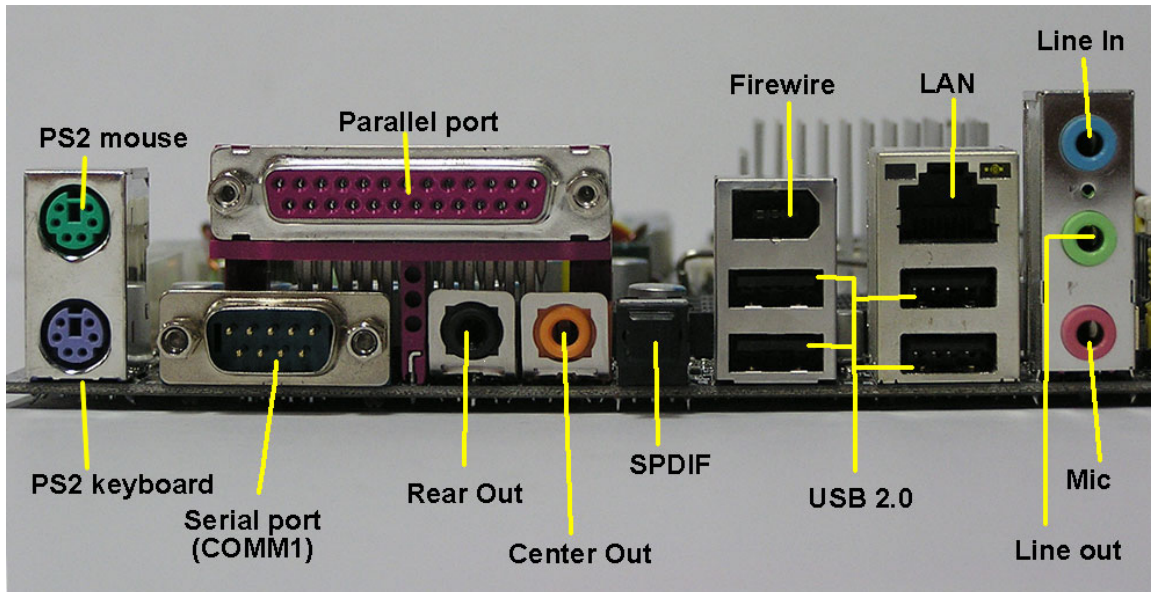
2.1.4 Onboard LED
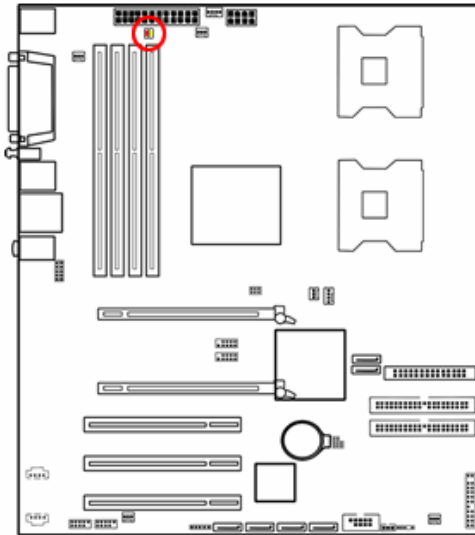
The onboard LED's are located on the area highlighted in the image shown. The **RED** light indicates the motherboard is receiving power from the power supply, the **YELLOW** light indicates when the computer is turned on.

2.1.5 Jumper/Header configurations

CMOS jumper [JP1]
This jumper allows the clearing of information stored on the system CMOS RAM memory. This memory contains information about the system's setup configuration and time settings configured through the BIOS setup utility. Once the information is cleared, the default configuration can be loaded. To clear the information on the system CMOS RAM do the following:

      1. Turn off the computer.

2. Unplug the power cable on the back of the computer
3. Remove the CMOS battery
4. Move CMOS jumper so that it covers pins 2 and 3 (see image below) and leave it there for 5 seconds
5. Move the CMOS jumper back to pins 1 and 2 (see image below)
6. Put the CMOS battery back in its socket
7. Plug power cable to the computer
8. Boot up and press DEL to enter setup

CLEAR CMOS JUMPER

Normal   Clear CMOS
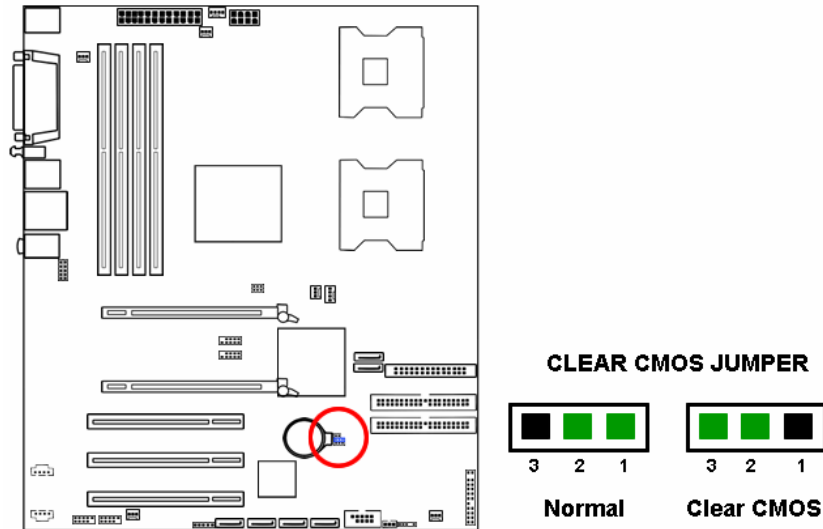
BIOS protection jumper [JP16]
This jumper protects the BIOS memory from being overwritten. It is a safety mechanism to avoid accidental or malicious BIOS flashing. If the jumper is positioned so that it covers pins 2 and 3, the BIOS will not allow any flash utilities to overwrite it. If the BIOS needs flashing, the pins must be covering pins 1 and 2 (see image below).

BIOS PROTECT JUMPER

By software   Locked

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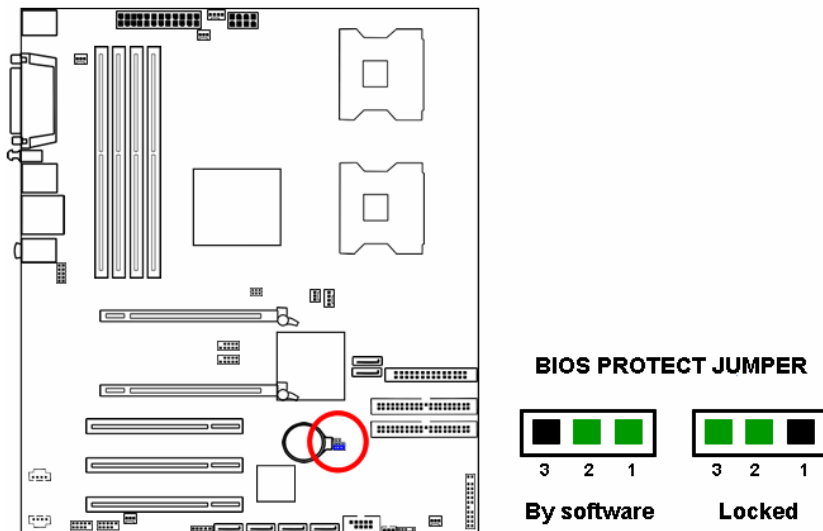
FSB jumper [JP3, JP3A]
These jumpers define the type of memory that the system will be using. In order to support 800MHz DDR2, the jumpers JP3 and JP3A (shown on the image below) need to be covering pins 2 and 3.
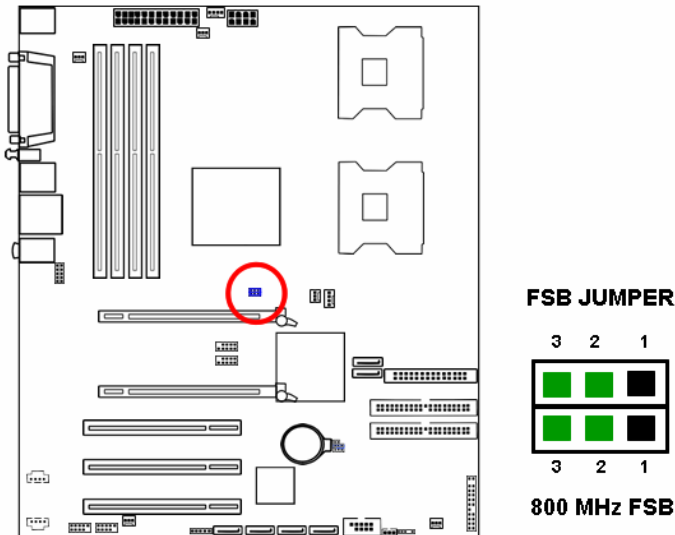
Case open pin header [J42]
This jumper when enabled will detect when the system's case (chassis) has been opened. A message will show up on the screen after the intrusion until the message is deleted. This feature is available only when using a chassis that supports intrusion detection. The sensor cable from the case needs to be plugged into this header. If there is no cable plugged into the case open pin header, the feature is disabled (see image below).
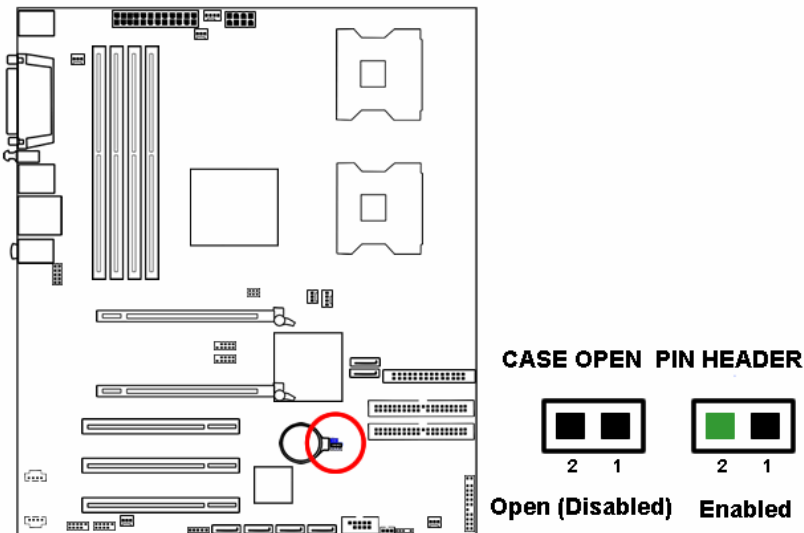
Front audio jumper [J57B]
This jumper allows the usage of front panel audio connectors. If the jumpers are located covering pins 5 and 6, and 9 and 10, the front audio feature is completely disabled (see image below).

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FRONT AUDIO JUMPER

without Front Audio Connector

with Front Audio Connector
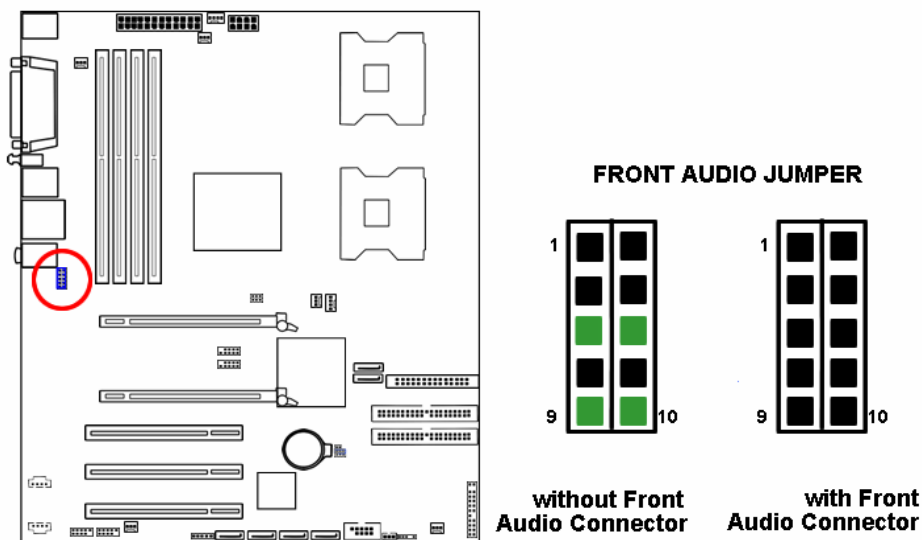
To enable to front panel audio, these connectors need to be plugged into the pin headers as follows:

MicIn-L	GND
MicIn-R	VCC
LineOut-R	
Audio VERF	NC Key
LineOut-L	

Front panel connector

Power

ACPI — PLED

HDD — KL
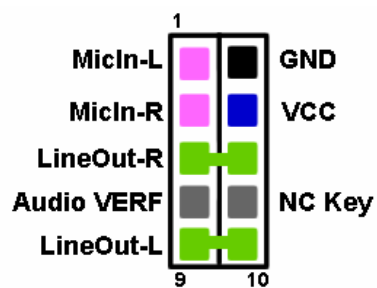
Reset — Speaker
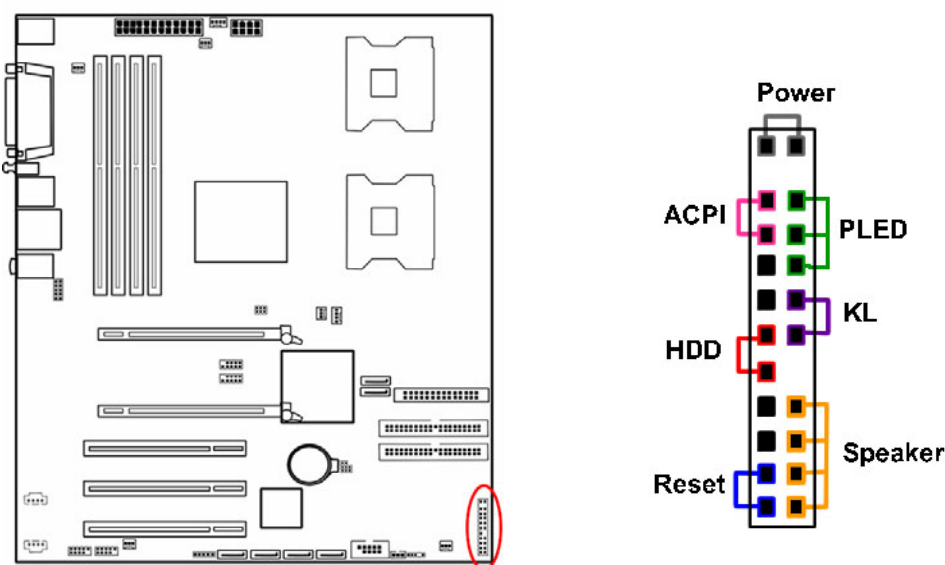
2.2 Hardware information

2.2.1 Supported processors

The X2 motherboard has two Intel ® 604 sockets. Each of these sockets can support an Intel ® Xeon CPU that runs on an 800 MHz Front Side Bus.

The following list shows the supported processors both on dual and single CPU configurations:

Single CPU
   Intel® Xeon™ Processor 3.6GHz w/ EM64T 800 MHz FSB w/1MB Cache
   Intel® Xeon™ Processor 3.4GHz w/ EM64T 800 MHz FSB w/1MB Cache
   Intel® Xeon™ Processor 3.2GHz w/ EM64T 800 MHz FSB w/1MB Cache
   Intel® Xeon™ Processor 3.0GHz w/ EM64T 800 MHz FSB w/1MB Cache
   Intel® Xeon™ Processor 2.8GHz w/ EM64T 800 MHz FSB w/1MB Cache

Dual CPU
   Dual Intel® Xeon™ Processor 3.6GHz w/ EM64T 800 MHz FSB w/1MB Cache
   Dual Intel® Xeon™ Processor 3.4GHz w/ EM64T 800 MHz FSB w/1MB Cache
   Dual Intel® Xeon™ Processor 3.2GHz w/ EM64T 800 MHz FSB w/1MB Cache
   Dual Intel® Xeon™ Processor 3.0GHz w/ EM64T 800 MHz FSB w/1MB Cache
   Dual Intel® Xeon™ Processor 2.8GHz w/ EM64T 800 MHz FSB w/1MB Cache

2.2.2 System memory

The X2 motherboard supports up to four Dual Channel 400MHz DDR2 Registered SDRAM. Each slot will support 256, 512 MB or 1GB memory DIMMS. For optimum performance, memory must be installed in pairs.
Slots DIMM_3 and DIMM_2 should be populated first, followed by DIMM_1 and DIMM_0. When using two pairs of different sizes, the larger memory modules must be installed in slots DIMM_3 and DIMM_2. See table below for more details.

Memory configurations

DIMM0	DIMM1	DIMM2	DIMM3	TOTAL
		256MB	256MB	**512MB**
		512MB	512MB	**1 GB**
	1 GB		1 GB	**2 GB**
512MB	512 MB	1 GB	1 GB	**3 GB**
1 GB	1 GB	1 GB	1 GB	**4 GB**

Chapter 3: BIOS setup

This motherboard comes installed with an American Megatrends Inc. BIOS. This utility will allow modification and monitoring of hardware settings on the motherboard. In order to enter the BIOS, press DEL during the POST screen.

3.1 Main

In the Main screen the system time and date can be set. This screen will also show the information recollected form the CPU and the amount of recognized system memory.

3.2 Advanced

3.2.1 CPU Configuration

```
                         BIOS SETUP UTILITY
        Advanced

  Configure advanced CPU settings            This should be enabled
  Module Version:3C.07                       order to boot legacy
                                             OSes that cannot
  Manufacturer:Intel                         support CPUs with
  Brand String:Intel(R) Xeon(TM) CPU 2.80GHz extended CPUID
  Frequency   :2.80GHz                       functions.
  FSB Speed   :800MHz
  Cache L1    :16 KB
  Cache L2    :1024 KB
  Ratio Status:Locked
  Ratio Actual Value:14

    Ratio CMOS Setting:        [ 14]      ↔      Select Screen
    VID CMOS Setting  :        [ 62]      ↑↓     Select Item
  Max CPUID Value Limit:       [Disabled]  ←-     Change Option
  Hardware Prefetcher:         [Enabled]  F1     General Help
  Adjacent Cache Line Prefetch: [Enabled]  F10    Save and Exit
  Hyper-Threading Function     [Enabled]  ESC    Exit


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```

Max CPUID Value Limit
Legacy operating systems do not support CPUs with extended CPUID functions. In order for these operating systems to boot up, this setting needs to be enabled.
[Options are: 'Enabled' and 'Disabled']

Hardware Prefetcher
Enables or disables the hardware prefecther feature.
[Options are: 'Enabled' and 'Disabled']

Adjacent Cache Line Prefetch
Enables or disables the Adjacent Cache Line Prefetch Feature.
[Options are: 'Enabled' and 'Disabled']

Hyper-Threading Function
In order to use the Hyper-Threading with supported processors, this feature needs to be enabled.
[Options are: 'Enabled' and 'Disabled']

3.2.2 IDE Configuration

```
                        BIOS SETUP UTILITY
    Advanced

IDE Configuration                               Select IDE Mode.

    IDE Configuration          [P-ATA Only]     P-ATA Only:
       S-ATA Running Enhanced Mode [Yes]           4 P-ATA & 2 S-ATA
        P-ATA Channel Selection   [Both]
       S-ATA Ports Definition     [P0-3rd./P1-4th.] S-ATA Only:
          Configure S-ATA as RAID [No]              2 S-ATA

  ▶ Primary IDE Master          : [Not Detected]  P-ATA & S-ATA:
  ▶ Primary IDE Slave           : [Not Detected]     2 P-ATA & 2 S-ATA
  ▶ Secondary IDE Master        : [ATAPI CDROM]
  ▶ Secondary IDE Slave         : [Not Detected]
  ▶ Third IDE Master            : [Not Detected]  ↔     Select Screen
  ▶ Fourth IDE Master           : [Not Detected]  ↑↓    Select Item
                                                  +-    Change Option
  Hard Disk Write Protect        [Disabled]       F1    General Help
  IDE Detect Time Out (Sec)      [35]             F10   Save and Exit
  ATA(PI) 80Pin Cable Detection  [Host]           ESC   Exit


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```

IDE Configuration
This setting allows the configuration of ATA devices and the two SATA ports controlled by the 6300 ESB Southbridge (SATA1 and SATA2). Configurations are explained as follows:

Disabled:	No ATA or SATA devices are recognized by the system
P-ATA Only:	2 SATA ports are enabled and up to 4 PATA devices
S-ATA Only:	Only 2 SATA ports are enabled, PATA devices disabled
P-ATA & S-ATA:	2 SATA ports are enabled and up to 2 PATA devices

Combined Mode Option
This option will only appear when using P-ATA & S-ATA configuration.
Permitted configurations:

	Primary Channel	*Secondary Channel*
1.	SATA	PATA
2.	PATA	SATA

When PATA is set to 1st channel, only the devices connected to IDE1 will be detected; when PATA is set to 2nd channel, only devices connected to IDE2 will be detected.
[Options are: 'S-ATA 1st Channel' and 'P-ATA 1st Channel']

S-ATA Running Enhanced Mode
This setting allows enhanced functions on SATA1 and SATA2, such as port definition and enabling/disabling RAID.
[Options are: 'Enabled' and 'Disabled']

P-ATA Channel Selection
This setting will enable either one or both of the IDE ports. All devices connected to each port will be enabled only if the channel is enabled. Primary IDE channel refers to IDE_1, and Secondary IDE channel refers to IDE_2.
[Options are: 'Primary', 'Secondary' and 'Both']

S-ATA Ports Definition
The third and fourth IDE Master that are displayed under the IDE configuration screen represent the two SATA ports SATA1 and SATA2. This setting indicates which SATA is third and which is fourth.
[Options are: 'P0-3rd./P1-4th.' and 'P0-4th./P1-3rd.']

Configure S-ATA as RAID
Enables or disables RAID on SATA1 and SATA2 through the Adaptec RAID utility.
[Options are: 'Enabled' and 'Disabled']

Primary/Secondary/Third/Fourth IDE Master/Slave
If the device is detected, information on the device is displayed.

Hard Disk Write Protect
Protects the hard drive from being overwritten when it is accessed through BIOS.
[Options are: 'Enabled' and 'Disabled']

IDE Detect Time Out (Sec)
Selects the time out value for detecting ATA/ATAPI devices during boot up.
[Options are: 'Enabled' and 'Disabled']

ATA(PI) 80Pin Cable Detection
Selects the mechanism for detecting 80Pin ATA(PI) cable.
[Options are: 'Host & Device', 'Host', and 'Device']

3.2.3 Floppy Configuration

This screen shows the floppy drives detected and the drive letter assigned to each of them.

3.2.4 SuperI/O Configuration

```
                          BIOS SETUP UTILITY
        Advanced

  Configure Win627THF Super IO Chipset          Allows BIOS to Enable
                                                 or Disable Floppy
  OnBoard Floppy Controller      [Enabled]       Controller.
  Serial Port1 Address           [3F8/IRQ4]
  Serial Port2 Address           [2F8/IRQ3]
    Serial Port2 Mode            [Normal]
  Parallel Port Address          [Disabled]
  OnBoard Game Port              [Disabled]
  OnBoard MIDI Port              [Disabled]
  ICH SIO Serial Port1 Address   [Disabled]
  ICH SIO Serial Port2 Address   [Disabled]

                                                 ←→      Select Screen
                                                 ↑↓      Select Item
                                                 +-      Change Option
                                                 F1      General Help
                                                 F10     Save and Exit
                                                 ESC     Exit

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```

Onboard Floppy Controller
Enables or disables the floppy controller.
[Options are: 'Enabled' and 'Disabled']

Serial Port1 Address
Selects the base address to use for the Serial Port1.
[Options are: '3F8/IRQ4', '3E8/IRQ4', and '2E8/IRQ3']

Serial Port2 Address
Selects the base address to use for the Serial Port2.
[Options are: '2F8/IRQ3', '3E8/IRQ4', and '2E8/IRQ3']

Serial Port2 Mode
Selects the mode in which Serial Port2 will function.
 [Options are: 'Normal', 'IrDA', and 'ASK IR']

IR I/O Pin Select
This setting appears when Serial Port2 Mode is set to IrDA or ASK IR. It will let the BIOS
select Receiver or Transmit pin.
 [Options are: 'SINB/SOUTB' and 'IRRX/IRTX']

IR Duplex Mode
This setting appears when Serial Port2 Mode is set to IrDA or ASK IR. It will let the BIOS
select IR transmission mode.
 [Options are: 'Full Duplex' and 'Half Duplex']

Parallel Port Address
Selects the base address for the Parallel Port.
[Options are: '378', '278', and '3BC']

Parallel Port Mode
Selects which mode the parallel mode will function.
[Options are: 'Normal', 'Bi-Directional', 'EPP', and 'ECP']

EPP Version
This setting only appears when Parallel Port Mode is set to EPP. Selects the EPP version for the Parallel Port.
[Options are: '1.9' and '1.7']

ECP Mode DMA Channel
This setting only appears when Parallel Port Mode is set to EPP. Selects the parallel port ECP DMA.
[Options are: 'DMA0', 'DMA1', and 'DMA3']

Parallel Port IRQ
Selects the IRQ for the Parallel Port.
[Options are: 'IRQ5' and 'IRQ7']

Onboard Game Port
Enable or disable the game port.
[Options are: 'Enabled' and 'Disabled']

Onboard MIDI Port
Enable or disable the onboard MIDI port.
[Options are: 'Disabled', '300', and '330']

MIDI IRQ Select
This setting only appears when the Onboard MIDI port is not disabled. Selects MIDI port IRQ
[Options are: 'IRQ5', 'IRQ7', 'IRQ10', and 'IRQ11']

ICH SIO Serial Port1 Address
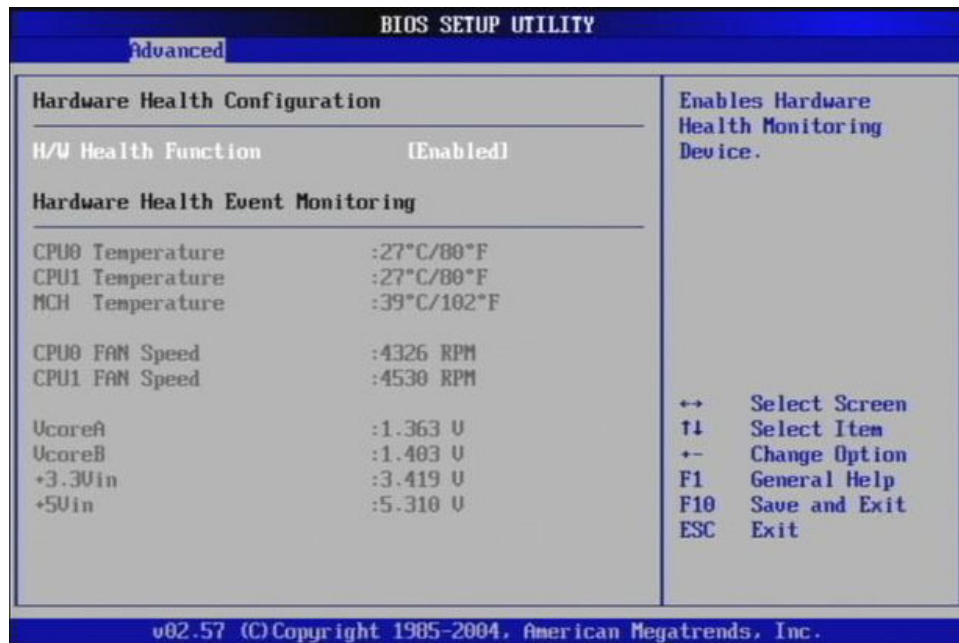Selects the ICH Serial I/O Unit Serial Port1 Base addresses.
[Options are: '3F8/IRQ4', '2F8/IRQ3', '2E8/IRQ4', and '2E8/IRQ3']

ICH SIO Serial Port2 Address
Selects the ICH Serial I/O Unit Serial Port2 Base addresses.
[Options are: '3F8/IRQ4', '2F8/IRQ3', '2E8/IRQ4', and '2E8/IRQ3']

3.2.5 Hardware Health Configuration

```
                       BIOS SETUP UTILITY
          Advanced

  Hardware Health Configuration                    Enables Hardware
  ───────────────────────────────                  Health Monitoring
  H/W Health Function        [Enabled]             Device.

  Hardware Health Event Monitoring
  ──────────────────────────────────
  CPU0 Temperature           :27°C/80°F
  CPU1 Temperature           :27°C/80°F
  MCH  Temperature           :39°C/102°F

  CPU0 FAN Speed             :4326 RPM
  CPU1 FAN Speed             :4530 RPM
                                                   ↔      Select Screen
  VcoreA                     :1.363 V             ↑↓     Select Item
  VcoreB                     :1.403 V             +-     Change Option
  +3.3Vin                    :3.419 V             F1     General Help
  +5Vin                      :5.310 V             F10    Save and Exit
                                                   ESC    Exit


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```

This screen shows real-time information collected from the temperature, fan speed and voltage sensors on the motherboard.

3.2.6 ACPI Configuration

```
                       BIOS SETUP UTILITY
          Advanced

  ACPI Settings                                    General ACPI
  ─────────────                                    Configuration settings
  ▶ General ACPI Configuration
  ▶ Advanced ACPI Configuration









                                                   ↔      Select Screen
                                                   ↑↓     Select Item
                                                   Enter  Go to Sub Screen
                                                   F1     General Help
                                                   F10    Save and Exit
                                                   ESC    Exit


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```

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3.2.6.1 General ACPI Configuration

```
                         BIOS SETUP UTILITY
        Advanced

   General ACPI Configuration                      Select the ACPI
   ─────────────────────────────                   state used for
   Suspend mode              [S1 (POS) only]       System Suspend.






                                                   ↔     Select Screen
                                                   ↑↓    Select Item
                                                   ←-    Change Option
                                                   F1    General Help
                                                   F10   Save and Exit
                                                   ESC   Exit


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Suspend mode
Selects the ACPI state that is used when the system goes to sleep.
[Options are: 'S1 (POS) only' and 'S1 & S3 (STR)']

3.2.6.2 Advanced ACPI Configuration

```
                         BIOS SETUP UTILITY
        Advanced

   Advanced ACPI Configuration                     Enable RSDP pointers
                                                   to 64-bit Fixed System
   ACPI 2.0 Features         [No]                  Description Tables.
   ACPI APIC support         [Enabled]
   AMI OEMB table            [Enabled]
   Headless mode             [Disabled]
   Remote Access             [Disabled]




                                                   ↔     Select Screen
                                                   ↑↓    Select Item
                                                   ←-    Change Option
                                                   F1    General Help
                                                   F10   Save and Exit
                                                   ESC   Exit


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ACPI 2.0 Features
Enables RSDP Pointers to 64-bit Fixed System Description Tables.
[Options are: 'No' and 'Yes']

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ACPI APIC support
Include the ACPI APIC table pointer to the RSDT pointer list.
[Options are: 'Enabled' and 'Disabled']

AMI OEMB table
Include IEMB table pointer to R(X)SDT pointer lists.
[Options are: 'Enabled' and 'Disabled']

Headless mode
Enables or disables headless operation mode through ACPI.
[Options are: 'Enabled' and 'Disabled']

Remote Access
Selects the remote access type.
[Options are: 'Enabled' and 'Disabled']

Terminal Type
Only appears when Remote Access is enabled. Selects the target terminal type.
[Options are: 'ANSI', 'VT100', and 'VT-UTF8']

Serial Port Number
Only appears when Remote Access is enabled. Selects the serial port for console redirection. The port needs to be enabled manually.
[Options are: 'COM1' and 'COM2']

Serial Port Mode
Only appears when Remote Access is enabled. Selects the Serial port settings.
[Options are: '115200 8,n,1','57600 8,n,1','38400 8,n,1','19200 8,n,1','09600 8,n,1']

3.2.7 MPS Configuration

```
                       BIOS SETUP UTILITY
        Advanced

   MPS Configuration                          Select MPS
                                              Revision.
   MPS Revision              [1.1]




                                          ↔    Select Screen
                                          ↑↓   Select Item
                                          +-   Change Option
                                          F1   General Help
                                          F10  Save and Exit
                                          ESC  Exit


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```
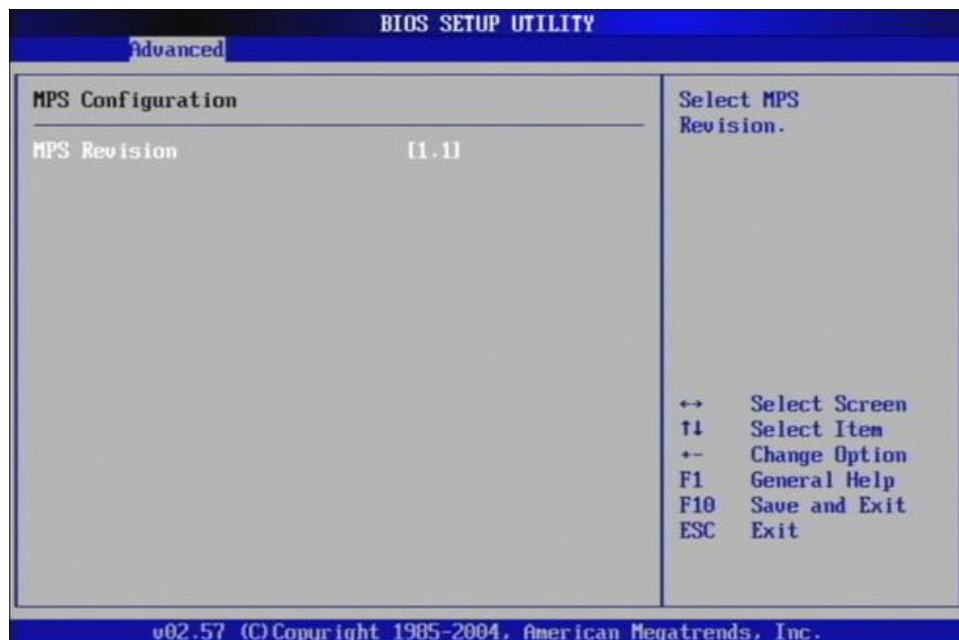
MPS Revision
Selects the MPS revision.
[Options are: '1.4' and '1.1']

3.2.8 PCI Express Configuration

Active State Power-Management
Activates or disables the PCI Express L0s and L1 link power states.
[Options are: 'Enabled' and 'Disabled']

PCI Express Port 2
Allows to enable or disable PCI-Express_2 slot. Display device will not be recognized when set to disable. When set to auto, the device will be enabled if it is recognized; otherwise it will be disabled.
[Options are: 'Auto', 'Enabled' and 'Disabled']

PCI Express Port 4
Allows to enable or disable PCI-Express_1 slot. Display device will not be recognized when set to disable. When set to auto, the device will be enabled if it is recognized; otherwise it will be disabled.
[Options are: 'Auto', 'Enabled' and 'Disabled']

PCIe Jitter Tolerance
Enables or disables PCIe Jitter Tolerance.
[Options are: 'Enabled' and 'Disabled']

PCIe Compliance mode
Enables or disables MCH entering PCI Express compliance mode.
[Options are: 'Enabled' and 'Disabled']

3.2.9 Remote Access Configuration

```
                        BIOS SETUP UTILITY
    Advanced

  Configure Remote Access type and parameters      Select Remote Access
                                                    type.
  Remote Access              [Disabled]




                                                    ↔    Select Screen
                                                    ↑↓   Select Item
                                                    ←    Change Option
                                                    F1   General Help
                                                    F10  Save and Exit
                                                    ESC  Exit



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```

Remote Access
Selects remote Access type. When enabled, parameters appear for configuration.
[Options are: 'Enabled' and 'Disabled']

Serial port number
Selects the serial port to be used for console redirection.
[Options are: 'COM1' and 'COM2']

Serial port mode
Selects the Serial port settings.
[Options are: '115200 8,n,1','57600 8,n,1','38400 8,n,1','19200 8,n,1','09600 8,n,1']

Flow control
Selects the Flow Control for console redirection.
[Options are: 'None', 'Hardware' and 'Software']

Redirection after BIOS POST
Determines for how long the redirection to the serial port chosen above will take place during the POST. Disable will turn off redirection after POST. Boot Loader will activate redirection during POST and during Boot Loader only. 'Always' will activate redirection all the time, but might cause some OSes to stop booting.
[Options are: 'Disable', 'Boot Loader', and 'Always']

Terminal Type
Selects the type of terminal determined for target.
[Options are: 'ANSI', 'VT100' and 'VT-UTF8']

VT-UTF8 Combo Key Support
Only shows up when the terminal type is ANSI or VT-100. It will enable VT-UTF8 combination key support for ANSI and VT-100 terminals.
[Options are: 'Enabled' and 'Disabled']

3.2.10 USB Configuration

USB Function
Enables or disables internal USB controller headers. The USB ports on the back are not modified with this setting.
Settings:

Disabled	None of the USB ports connected to the internal headers are functional
2 USB ports	Only USB ports connected to header USB-1 are functional
All USB ports	Both USB-1 and USB-2 headers are functional

Legacy USB Support
Enables support for legacy USB devices. When set to auto, it will be enabled only if it is detected at boot up.
[Options are: 'Enabled', 'Disabled' and 'Auto']

USB 2.0 Controller
Enables or disables USB 2.0 support for internal USB ports. The USB ports on the back of the motherboard are not affected by this setting.
[Options are: 'Enabled' and 'Disabled']

USB 2.0 Controller Mode
Only available when USB Controller 2.0 is enabled. Configures the USB 2.0 controller speed to HiSpeed (480Mbs) or Full Speed (12Mbps).
[Options are: 'FullSpeed' and 'HiSpeed']

Hotplug USB FDD Support
Creates a dummy FDD device at bootup that will be associated with a FDD that is hot-plugged later. When set to Auto, the dummy FDD will be created only if there is no USB FDD present.
[Options are: 'Enabled', 'Disabled' and 'Auto']

3.2.11 Onboard Device Configuration
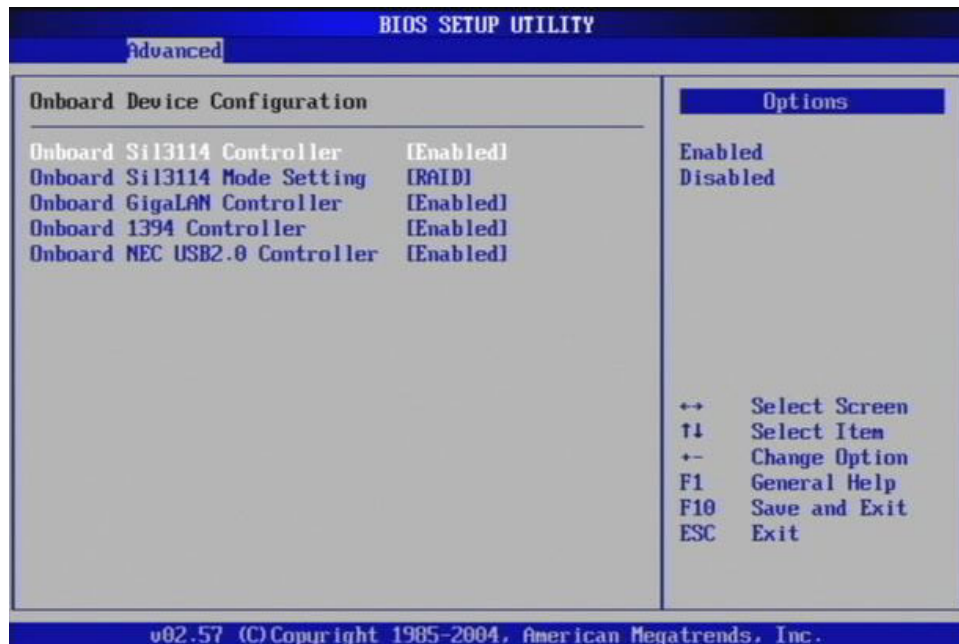
Onboard Sil3114 Controller
Enables or disables the Silicon Image RAID controller. When disabled, none of the SATA devices plugged into ports SATA_3 through SATA_6 will be recognized.
[Options are: 'Enabled' and 'Disabled']

Onboard Sil3114 Mode Setting
Enables or disables the RAID mode on the Silicon Image RAID controller.
[Options are: 'Enabled' and 'Disabled']

Onboard GigaLan Controller
Enables or disables the onboard LAN port.
[Options are: 'Enabled' and 'Disabled']

Onboard1394 Controller
Enables or disables the onboard 1394 controller.
[Options are: 'Enabled' and 'Disabled']

Onboard NEC USB2.0 Controller
Enables or disables the onboard USB 2.0 controller.
[Options are: 'Enabled' and 'Disabled']

3.2.12 Performance Setting

```
                        BIOS SETUP UTILITY
        Advanced

  Performance Setting                              ┌──── Options ────┐

  DDR2 Working Voltage        [1.80V]              1.80V
  OverClock                   [200]                1.85V
  CAS# Latency                [Auto]               1.90V
  tRP                         [Auto]               1.95V
  tRCD                        [Auto]
  tRAS                        [Auto]

  CAS# Latency         3
  tRP                  3
  tRCD                 3
                                                 ↔      Select Screen
                                                 ↑↓     Select Item
                                                 +-     Change Option
                                                 F1     General Help
                                                 F10    Save and Exit
                                                 ESC    Exit


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```

DDR2 Working Voltage
Selects the value for the voltage applied on DDR2 modules.
[Options are: '1.80V', '1.85V', '1.90V', and '1.95V']

OverClock
Memory overclocking; can be set to values in range from 200 to 255.

Cas# Latency
Modifies the Cas Latency of the memory modules; lower is better. However, the memory modules need to support this feature.
[Options are: 'Auto', '3', '4', and '5']

tRP
Modifies the tRP timing. tRP is the time required to terminate one row access and begin the next row access.
[Options are: 'Auto', '3', and '4']

tRCD
Modifies the tRCD timing. tRCD is the delay from the time a row is activated to when the cell (or column) is activated via the CAS signal and data can be written to or read from a memory cell. Lower is better, although if it is set too low the system will become unstable.
[Options are: 'Auto', '3', and '4']

tRAS
Modifies the tRAS timing. tRAS is the time the memory must wait before the next memory access can begin
[Options are: 'Auto', '7', '6', and '5']

31

3.3 PCIPnP

```
                      BIOS SETUP UTILITY
  Main    Advanced   PCIPnP    Boot    Security    Chipset    Power    Exit

  Advanced PCI/PnP Settings                    ▲    NO: lets the BIOS
                                                    configure all the
  WARNING: Setting wrong values in below sections   devices in the system.
           may cause system to malfunction.         YES: lets the
                                                    operating system
  Plug & Play O/S                [No]               configure Plug and
  PCI Latency Timer              [32]               Play (PnP) devices not
  Allocate IRQ to PCI VGA        [Yes]              required for boot if
  Palette Snooping               [Disabled]         your system has a Plug
  PCI IDE BusMaster              [Disabled]         and Play operating
  OffBoard PCI/ISA IDE Card      [Auto]             system.

  IRQ3                           [Available]
  IRQ4                           [Available]
  IRQ5                           [Available]
  IRQ7                           [Available]
  IRQ9                           [Available]
  IRQ10                          [Available]
  IRQ11                          [Available]
  IRQ14                          [Available]
  IRQ15                          [Available]

  DMA Channel 0                  [Available]   ↔      Select Screen
  DMA Channel 1                  [Available]   ↑↓     Select Item
  DMA Channel 3                  [Available]   +-     Change Option
  DMA Channel 5                  [Available]   F1     General Help
  DMA Channel 6                  [Available]   F10    Save and Exit
  DMA Channel 7                  [Available]   ESC    Exit

  Reserved Memory Size           [Disabled]    ▼

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```

Plug & Play O/S
When set to yes, a Plug and Play OS can configure PnP devices not required for boot
up. When set to no, the BIOS will configure all devices for the system.
[Options are: 'Yes' and 'No']

PCI Latency Timer
Value in units of PCI clocks for PCI device latency timer register.
[Options are: '32', '64', '96', '128', '160', '192', '224', and '248']

Allocate IRQ to PCI VGA
When enabled, a PCI VGA card can request an IRQ to be assigned for it. When
disabled, even if the PCI card requests the IRQ it is not assigned.
[Options are: 'Yes' and 'No']

Palette Snooping
When enabled the PCI devices are informed that an ISA graphics card is installed in the
system. This will allow the card to function correctly.
[Options are: 'Enabled' and 'Disabled']

PCI IDE BusMaster
When enabled the BIOS uses PCI busmastering foreading/writing to IDE devices. This setting increases performance when running DOS programs such as Norton Ghost or Partition Magic. Windows has its own IDE busmastering software, and is not affected by changing this BIOS setting.
[Options are: 'Enabled' and 'Disabled']

Offboard PCI/ISA IDE Card
Some PCI IDE cards require this option to be set to the specific PCI slot that is holding the card.
[Options are: 'Auto', 'PCI Slot 1', 'PCI Slot 2', 'PCI Slot 3', 'PCI Slot 4', 'PCI Slot 5', and 'PCI Slot 6']

IRQ 3-15
Indicates if the specific IRQ is either available or reserved for a PCI/PnP device.
[Options are: 'Available' and 'Reserved']

DMA Channel 0-7
Indicates if the specific DMA is either available or reserved for a PCI/PnP device.
[Options are: 'Available' and 'Reserved']

Reserved Memory Size
Size of the memory block to be reserved if legacy ISA devices are used.
[Options are: 'Disabled', '16', '32', and '64']

3.4 Boot
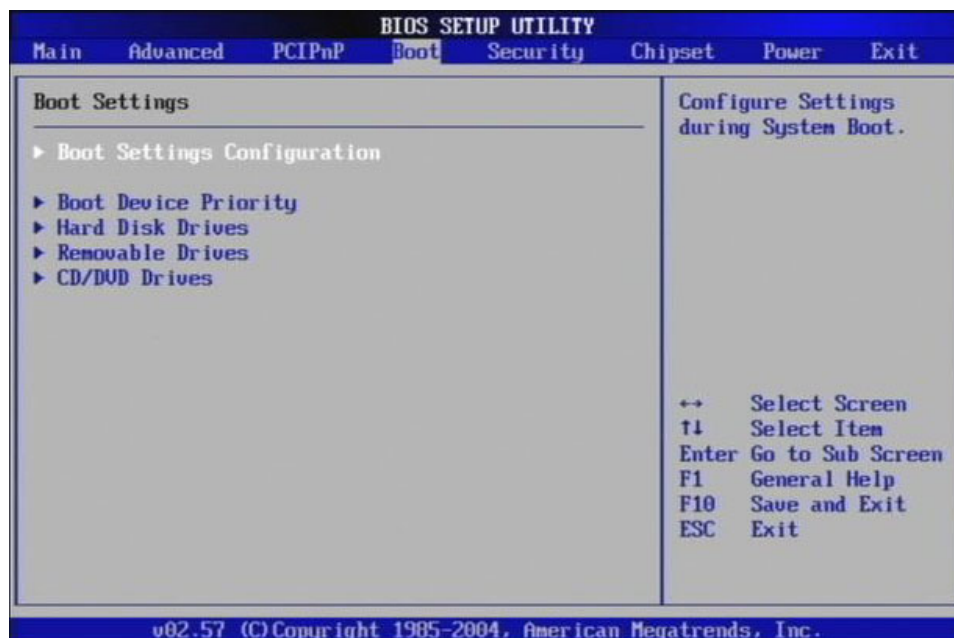
These tab gives access to different submenus where boot up settings can be modified. They are presented in detail as follows.

3.4.1 Boot Settings Configuration

Quick Boot
When enabled, the BIOS will skip some tests so that the computer boots up faster.
[Options are: 'Enabled' and 'Disabled']

Quiet Boot
When enabled, the OEM logo is displayed instead of the POST messages.
[Options are: 'Enabled' and 'Disabled']

AddOn ROM Display Mode
Set display mode for option ROM
[Options are: 'Force BIOS' and 'Keep Current']

Bootup Num-Lock
Selects state of the Num-Lock key when powering up the computer.
[Options are: 'On' and 'Off']

PS/2 Mouse Support
Selects support for PS/2 mouse.
[Options are: 'Enabled' and 'Disabled']

Wait For 'F1' If Error
Waits for the F1 key to be pressed if an error occurs.
[Options are: 'Enabled' and 'Disabled']

Hit 'DEL' Message Display
Displays message "Press DEL to run Setup" during the POST.
[Options are: 'Enabled' and 'Disabled']

Allows for option ROMs to trap the Interrupt 19
[Options are: 'Enabled' and 'Disabled']

3.4.2 Boot Device Priority
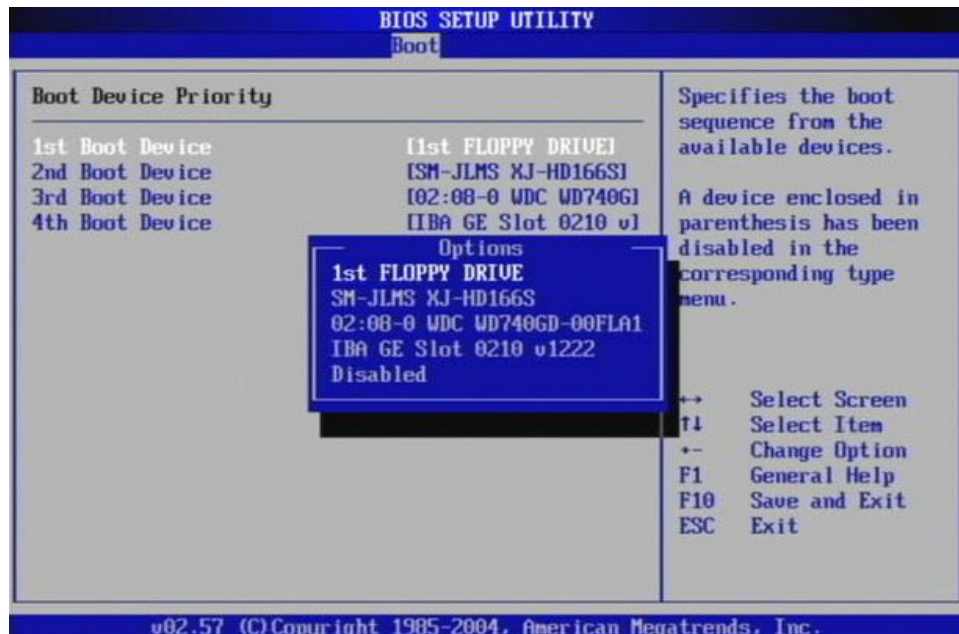
The boot devices are listed in order of importance. The system will look for a bootable device in this order and go down the list until it finds one or it will prompt that no boot device was found. When selecting each option, all the available boot devices are shown (one for HDD, ODD, Removable, and LAN) plus Disabled option.

3.4.3 Hard Disk Drives

```
                        BIOS SETUP UTILITY
                         Boot

Hard Disk Drives                                     Specifies the boot
_____                  sequence from the
1st Drive                  [02:08-0 WDC WD740G]       available devices.
2nd Drive                  [02:08-1 SiI Raid0 ]




                                                     ↔    Select Screen
                                                     ↑↓   Select Item
                                                     ←-   Change Option
                                                     F1   General Help
                                                     F10  Save and Exit
                                                     ESC  Exit


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```

Shows list of detected hard drives. The first one on the list will be considered for the boot device priority list.

3.4.4 Removable Drives

```
                        BIOS SETUP UTILITY
                         Boot

Removable Drives                                     Specifies the boot
_____                  sequence from the
1st Drive                  [1st FLOPPY DRIVE]         available devices.




                                                     ↔    Select Screen
                                                     ↑↓   Select Item
                                                     ←-   Change Option
                                                     F1   General Help
                                                     F10  Save and Exit
                                                     ESC  Exit


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```
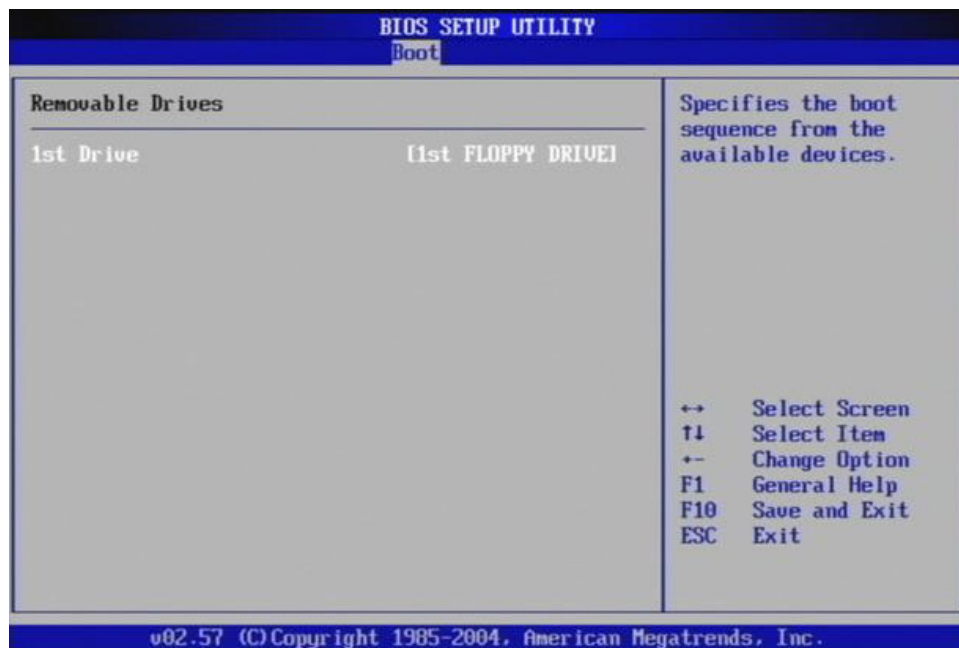
Shows list of detected removable drives. The first one on the list will be considered for the boot device priority list.

3.4.5 CD/DVD Drives
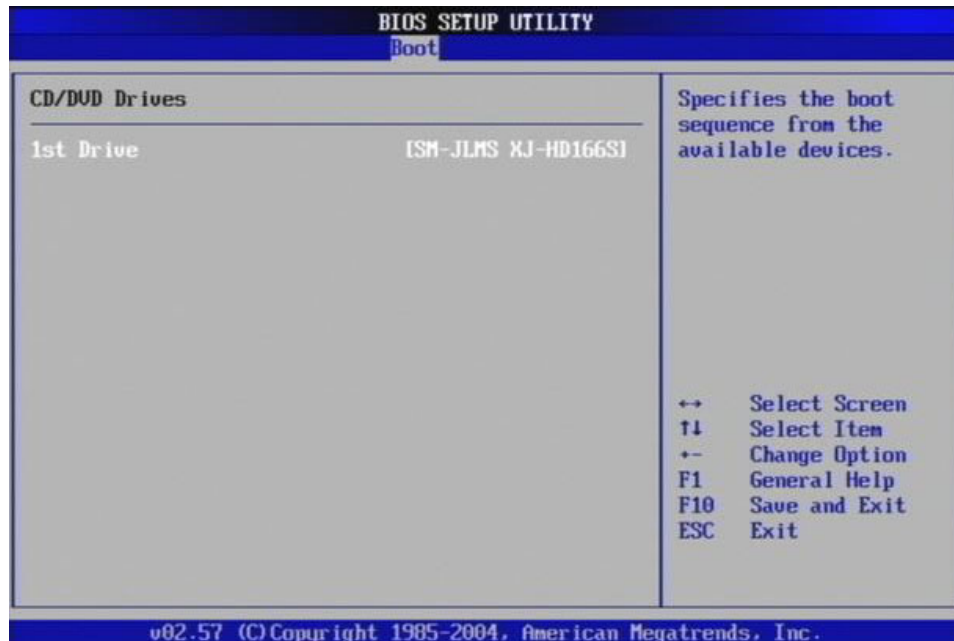
Shows list of detected optical drives. The first one on the list will be considered for the boot device priority list.

3.5 Security
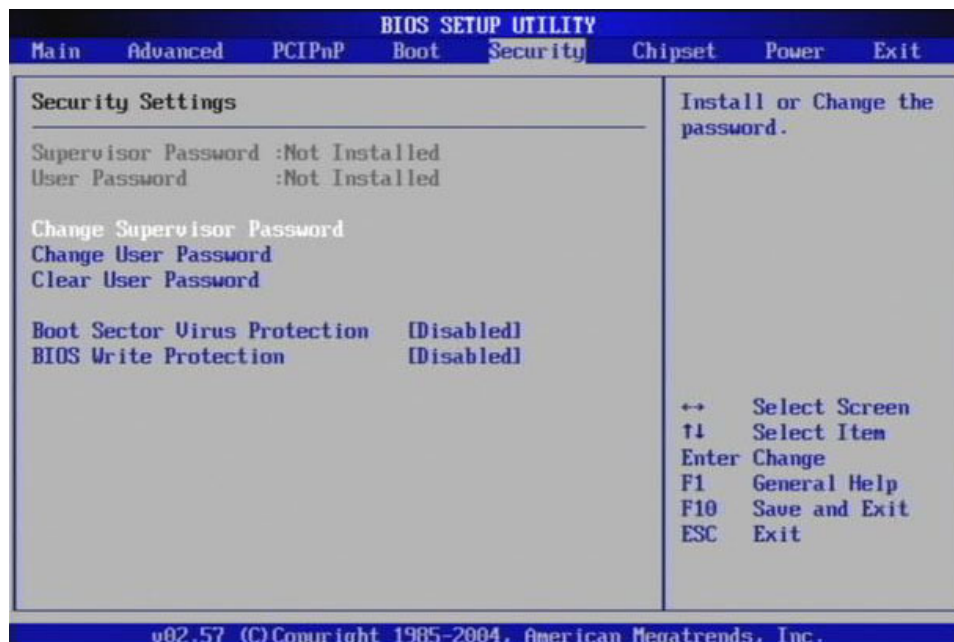
Change Supervisor Password
Installs or changes a supervisor password.

User Access Level
This option is only enabled when the supervisor password is installed. Defines access of users to the BIOS utility as follows:

No Access: Prevents user access to the setup utility
View Only: Allows user to access the setup utility; fields cannot be changed
Limited: Allows only limited fields to be changed such as Date and Time
Full Access: Grants full control to user access

Change User Password
Installs or changes the user password.

Clear User Password
Removes the user password

Password check
Determines when to check for password:

Setup: Requests password when entering setup
Always: Requests password on every boot

Boot Sector Virus Protection
Enables or disables the boot sector virus protection. When enabled, the system will give a warning when an attempt is made to write into the boot sector or partition table.
[Options are: 'Enabled' and 'Disabled']

BIOS Write Protection
This option needs to be disabled in order to overwrite information on the system BIOS.
[Options are: 'Enabled' and 'Disabled']

3.6 Chipset

3.6.1 NorthBridge Configuration

Memory Remap Feature
Allows for the remapping of overlapped PCI memory above the total physical memory.
[Options are: 'Enabled' and 'Disabled']

3.6.2 SouthBridge Configuration

OnBoard AC'97 Audio
Enables/disables onboard sound controller. [Options are: 'Enabled' and 'Disabled']

3.7 Power


```
                          BIOS SETUP UTILITY
  Main    Advanced    PCIPnP    Boot    Security    Chipset    Power    Exit

  APM Configuration                              ▲    Enable or disable
                                                      APM.
  Power Management/APM            [Enabled]
  Video Power Down Mode           [Disabled]
  Hard Disk Power Down Mode       [Disabled]
  Standby Time Out                [Disabled]
  Suspend Time Out                [Disabled]
  Throttle Slow Clock Ratio       [50%]
  Keyboard & PS/2 Mouse           [MONITOR]
  FDC/LPT/COM Ports               [MONITOR]
  Primary Master IDE              [MONITOR]
  Primary Slave IDE               [MONITOR]
  Secondary Master IDE            [MONITOR]
  Secondary Slave IDE             [MONITOR]

  System Thermal                  [Disabled]      ↔   Select Screen
                                                  ↑↓  Select Item
  Power Button Mode               [On/Off]        ←   Change Option
  Restore on AC Power Loss        [Last State]    F1  General Help
                                                  F10 Save and Exit
  Resume On Ring                  [Disabled]      ESC Exit
  Resume On PME#/LAN              [Disabled]
  Resume On RTC Alarm             [Disabled]      ▼

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```

Power Management/APM
Enables or disables the Advanced Power Management. When enabled, configuration settings become available on this same menu.
[Options are: 'Enabled' and 'Disabled']

Video Power Down Mode
This will power down video in suspend or standby mode.
Only available when Power Management/APM is enabled
[Options are: 'Disabled', 'Standby', and 'Suspend']

Hard Disk Power Down Mode
This will power down hard disks in suspend or standby mode.
Only available when Power Management/APM is enabled
[Options are: 'Disabled', 'Standby', and 'Suspend']

Standby Time Out
The system will go into standby n the specified time of inactivity.
Only available when Power Management/APM is enabled
[Options are: 'Disabled', '1 min', '2 min', '4 min', '8 min', '10 min', '20 min', '30 min', '40 min', '50 min' and '60 min']

Suspend Time Out
The system will go into standby n the specified time of inactivity.
Only available when Power Management/APM is enabled
[Options are: 'Disabled', '1 min', '2 min', '4 min', '8 min', '10 min', '20 min', '30 min', '40 min', '50 min' and '60 min']

40

Throttle Slow Clock Ratio
Selects the Duty Cycle in Throttle mode.
Only available when Power Management/APM is enabled
[Options are: '12.5%', '25%', '37.5%', '50%', '62.5%', '75.0%' and '87.5%']

Keyboard & PS/2 Mouse
Monitors the keyboard and mouse PS2 ports
Only available when Power Management/APM is enabled
[Options are: 'IGNORE' and 'MONITOR']

FDC/LPT/COM Ports
Monitors parallel and serial ports
Only available when Power Management/APM is enabled
[Options are: 'IGNORE' and 'MONITOR']

Primary Master IDE
Monitors primary master IDE device
Only available when Power Management/APM is enabled
[Options are: 'IGNORE' and 'MONITOR']

Primary Slave IDE
Monitors primary slave IDE device
Only available when Power Management/APM is enabled
[Options are: 'IGNORE' and 'MONITOR']

Secondary Master IDE
Monitors secondary master IDE device
Only available when Power Management/APM is enabled
[Options are: 'IGNORE' and 'MONITOR']

Secondary Slave IDE
Monitors secondary slave IDE device
Only available when Power Management/APM is enabled
[Options are: 'IGNORE' and 'MONITOR']

System Thermal
Enables or disables Thermal to generate a power management event.
Only available when Power Management/APM is enabled
[Options are: 'Enabled' and 'Disabled']

Power Button Mode
Determines the behavior of the system when pressing the power button.
[Options are: 'On/Off' and 'Suspend']

Restore on AC Power Loss
Determines computer's state after a power outage.
[Options are: 'Power Off', 'Power On', and 'Last State']

Resume On Ring
Enables or disables RI to generate a wake event.
[Options are: 'Enabled' and 'Disabled']

Resume On PME#/LAN
Enables or disables PME to generate a wake event.
[Options are: 'Enabled' and 'Disabled']

Resume On RTC Alarm
Enables or disables RTC to generate a wake event.
[Options are: 'Enabled' and 'Disabled']

RTC Alarm Date (Days)
Sets the day schedule for an alarm to be generated
[Options are chosen using '+' and '-' keys. They range from 1 to 31 days or everyday]

RTC Alarm Time
Sets the time schedule for an alarm to be generated
[Options are chosen using '+' and '-' keys, navigate through time using TAB, Shift-TAB, and Enter]

3.8 Exit

Save Changes and Exit
This option will save changes and then restart the computer. This can also be performed by pressing F10.

Discard Changes and Exit
This option will exit setup and restart the computer without saving any changes. This can also be performed by pressing ESC.

Load Optimal Defaults
This option will load the optimal default values for all options. This can also be performed by pressing F9.

<u>Load Failsafe Defaults</u>
This option will load the failsafe default values for all options. This can also be performed by pressing F8.

Chapter 4: Silicon Image RAID Utility

4.1 Introduction

The Silicon Image RAID controller supports RAID 0, RAID 1, RAID 10 and spare drive configuration. Some other functions that can performed are a low level format, rebuild malfunctioning RAID 1 arrays and resolve conflicts.

The RAID utility can be accessed by pressing CTR+S or F4 when prompted during the POST. This utility will only be accessible when the Sil3114 is enabled on the system BIOS and it is set to RAID mode (see section 3.2.11).

Once inside the utility, keyboard navigation will be required since there is no mouse support. The *Up* and *Down* arrow keys (↑,↓) will permit navigation through the menu options. *Enter* key is used to select and the *ESC* to return to the previous menu.

To exit the application press *Ctrl-E*, and Y at the prompt.

4.2 Main Menu
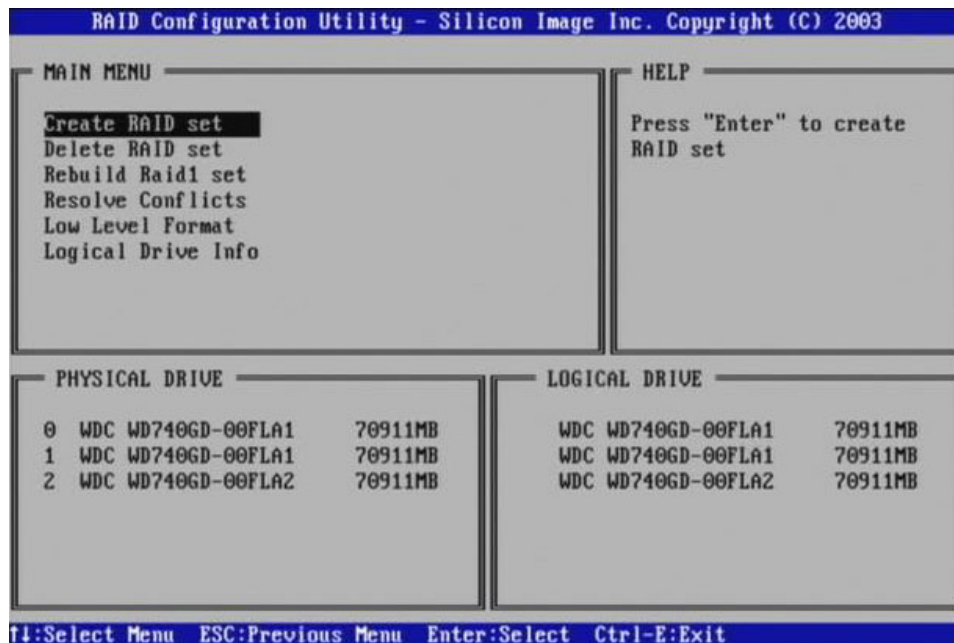
These screen shows the menu options and also the drives recognized by the utility. Note that only devices plugged into SATA_3 through SATA_6 will be detected.

4.3 Create RAID 0

1. Select the Create RAID set option and choose the type RAID 0.
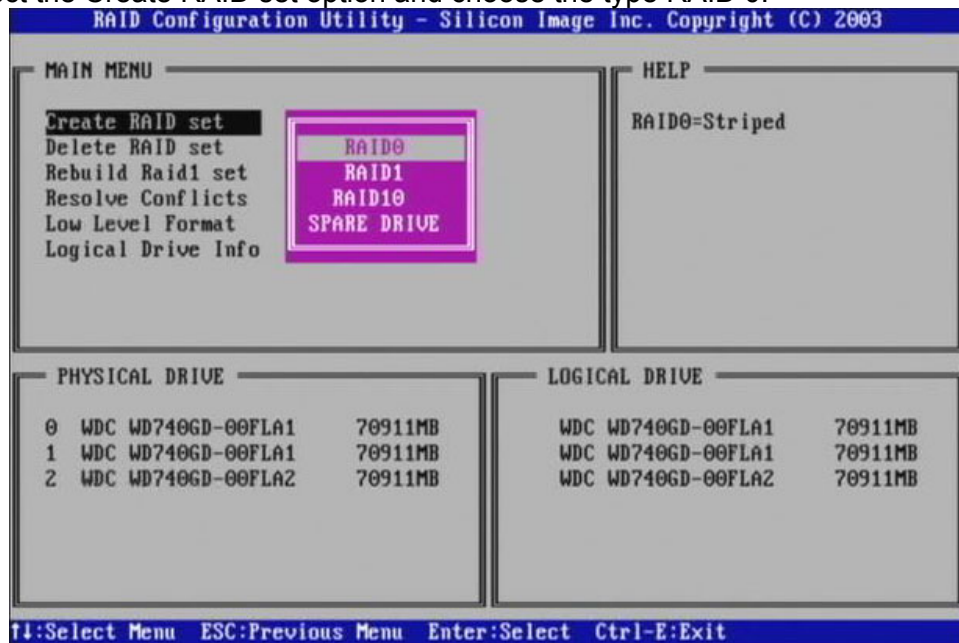
2. Select the number of drives that will be part of the RAID.
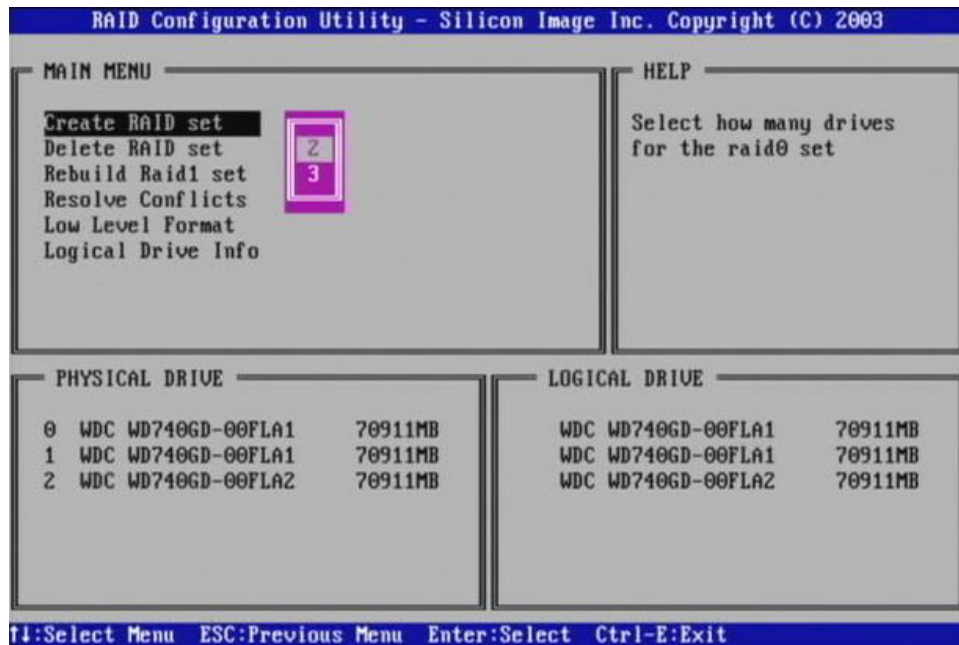
3. Select Auto or Manual Configuration. Auto Configuration will automatically create the RAID 0 with the first drive detected as 0 and the second one as 1, and a stripe size of 64K. Through Manual configuration these settings can be modified. See the following images for reference:

4. Press Y at the prompt "Are you sure (Y/N)?"

5. Once the RAID has been created, it will show up on the bottom right corner of the screen.
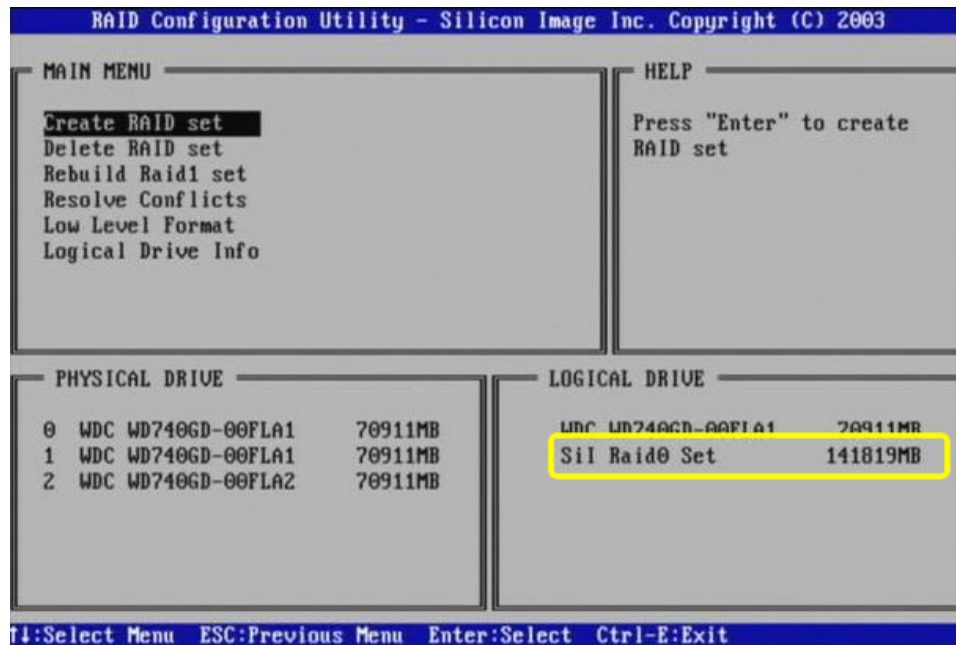
4.4 Create RAID 1

When a RAID 1 is configured, two identical hard drives need to be installed in the system. The Silicon Image RAID utility can create a blank RAID or copy the contents of one hard drive into a mirror drive.

1. Select Create RAID set and choose RAID 1.
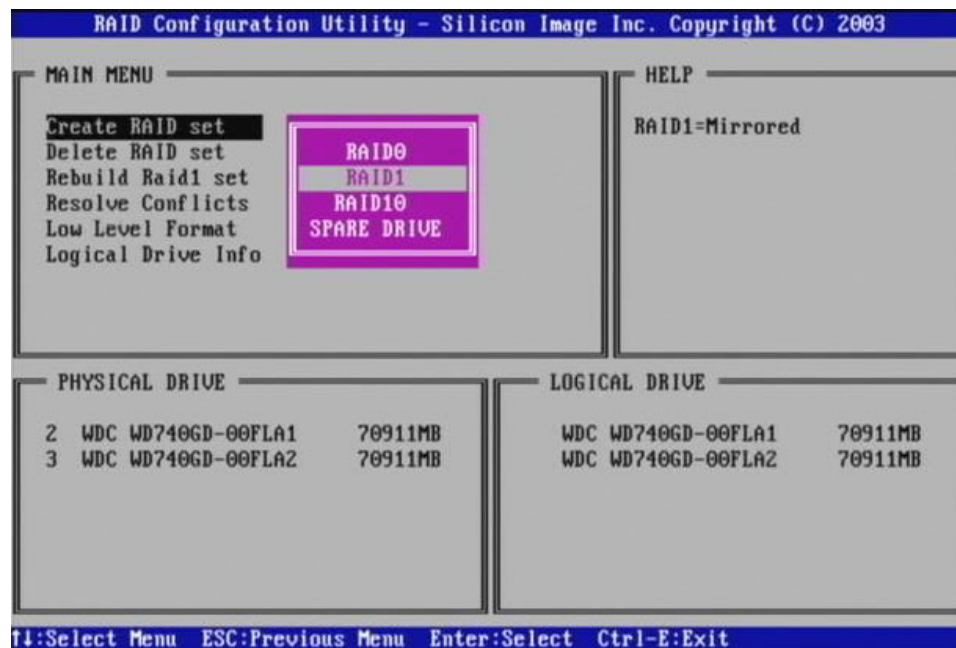
2. Select auto or manual configuration. Auto configuration will automatically create a brand new RAID 1 with no information on it. Any information on the drives will be lost.

```
┌─ RAID Configuration Utility - Silicon Image Inc. Copyright (C) 2003 ─┐
┌─ MAIN MENU ─────────────────────────┐  ┌─ HELP ────────────────────┐
                                          Press "Enter" to automati-
 Auto configuration                       cally create a RAID 1 set
 Manual configuration                     without data copy

                                          For migrating single HDD
                                          into RAID 1 set, use Manual
                                          configuration instead

 Are You Sure ( Y/N )?
└─────────────────────────────────────┘  └───────────────────────────┘
┌─ PHYSICAL DRIVE ───────────────────┐  ┌─ LOGICAL DRIVE ─────────────┐
  0  WDC WD740GD-00FLA1    70911MB        WDC WD740GD-00FLA1    70911MB
  1  WDC WD740GD-00FLA1    70911MB        WDC WD740GD-00FLA1    70911MB
  2  WDC WD740GD-00FLA2    70911MB        WDC WD740GD-00FLA2    70911MB




└────────────────────────────────────┘  └─────────────────────────────┘
↑↓:Select Menu  ESC:Previous Menu  Enter:Select  Ctrl-E:Exit
```

Manual configuration allows the possibility of choosing either creating a new blank RAID or mirroring a new drive from an already existing one.


```
┌─ RAID Configuration Utility - Silicon Image Inc. Copyright (C) 2003 ─┐
┌─ MAIN MENU ─────────────────────────┐  ┌─ HELP ────────────────────┐
                                          Enable disk copy for
 Auto configuration                       Mirrored (RAID 1) set
 Manual configuration                     Disk copy - copy current
                                          content of source drive to
          ┌─────────────────────┐        mirror drive
          │ Create with data copy│
          │Create without data copy│
          └─────────────────────┘

└─────────────────────────────────────┘  └───────────────────────────┘
┌─ PHYSICAL DRIVE ───────────────────┐  ┌─ LOGICAL DRIVE ─────────────┐
  0  WDC WD740GD-00FLA1    70911MB        WDC WD740GD-00FLA1    70911MB
  1  WDC WD740GD-00FLA1    70911MB        WDC WD740GD-00FLA1    70911MB
  2  WDC WD740GD-00FLA2    70911MB        WDC WD740GD-00FLA2    70911MB




└────────────────────────────────────┘  └─────────────────────────────┘
↑↓:Select Menu  ESC:Previous Menu  Enter:Select  Ctrl-E:Exit
```

3. Press Y at the prompt "Are you sure (Y/N)?"

Are You Sure (Y/N)?

4. Once the RAID has been created, it will show up on the bottom right corner of the screen.
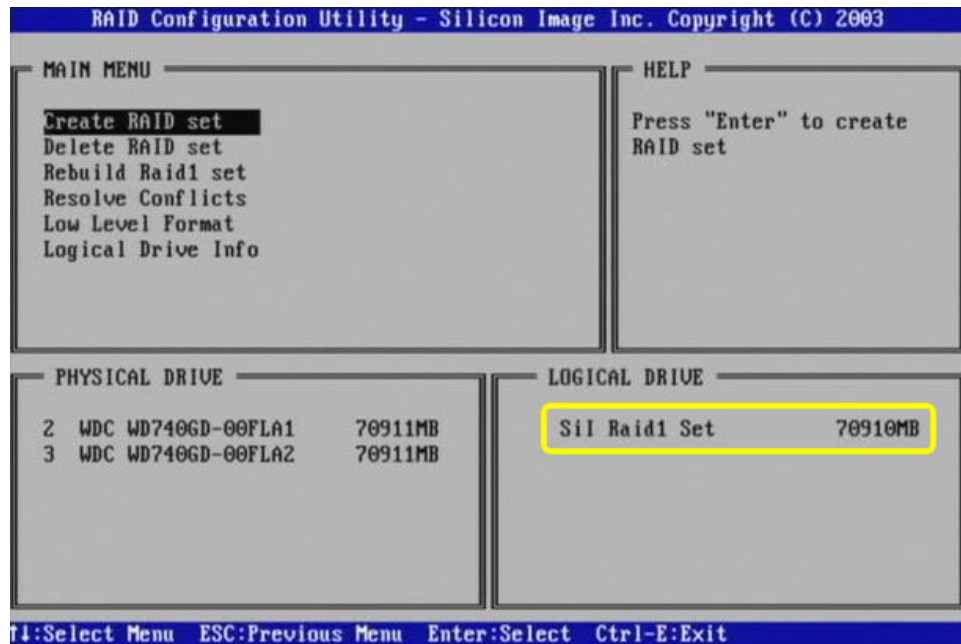
4.5 Delete RAID

1. Select the Delete RAID set option and press enter.
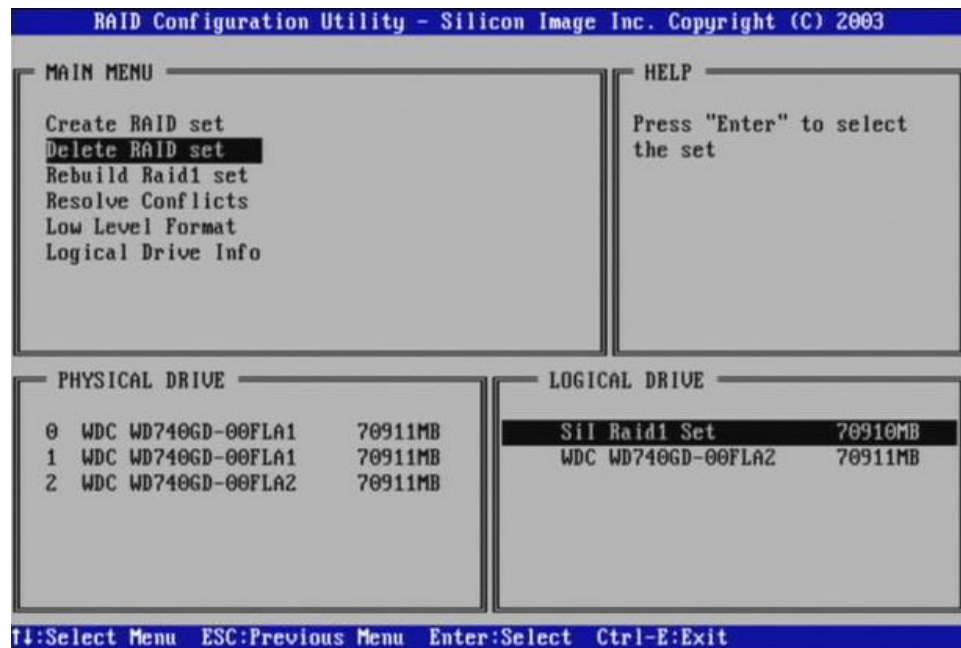
2. Select the RAID item that will be deleted.

3. Press Y to confirm when prompted.

Are You Sure (Y/N)?

4.6 Low Level Format

1. Select the Low Level Format option

```
RAID Configuration Utility - Silicon Image Inc. Copyright (C) 2003

 MAIN MENU                              HELP

  Create RAID set                        Press "Enter" to select
  Delete RAID set                        drive
  Rebuild Raid1 set
  Resolve Conflicts
  Low Level Format
  Logical Drive Info




 PHYSICAL DRIVE                          LOGICAL DRIVE

  0  WDC WD740GD-00FLA1    70911MB        WDC WD740GD-00FLA1    70911MB
  1  WDC WD740GD-00FLA1    70911MB        WDC WD740GD-00FLA1    70911MB
  2  WDC WD740GD-00FLA2    70911MB        WDC WD740GD-00FLA2    70911MB




↑↓:Select Menu   ESC:Previous Menu   Enter:Select   Ctrl-E:Exit
```

2. Select the drive that will be formated.

3. Press Y to confirm when prompted.

The data will be lost!
Are You Sure (Y/N)?

Chapter 5: Adaptec RAID Utility

5.1 Introduction

The Adaptec RAID utility manages the drives plugged into SATA_1 and SATA_2. To enter the Adaptec RAID utility, it has to be enabled on BIOS (see section 3.2.2). If there are Hard Drives connected to either of the SATA connectors, the system during POST will prompt or key combination Ctrl-A to enter.

NOTE: Alienware recommends installing RAID **only** on the Silicon Image RAID controller.
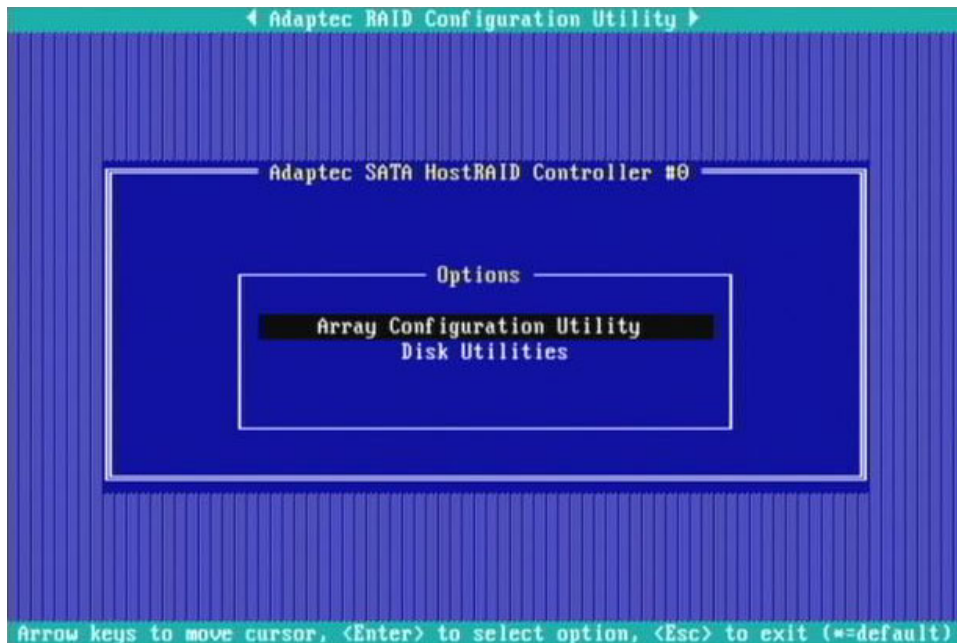
Once inside the utility, navigation is performed with Up and Down keys on the menus, ENTER to select, ESC for previous menu, TAB to go to next option and Shift-TAB to go to previous option.

5.2 Create RAID

1. Enter the Array Configuration Utility

2. Select the Create Array option from the menu.

3. Use INS key to select the drives that will be used on the RAID. (Use DEL key to deselect the drives). Press ENTER when finished selecting drives.
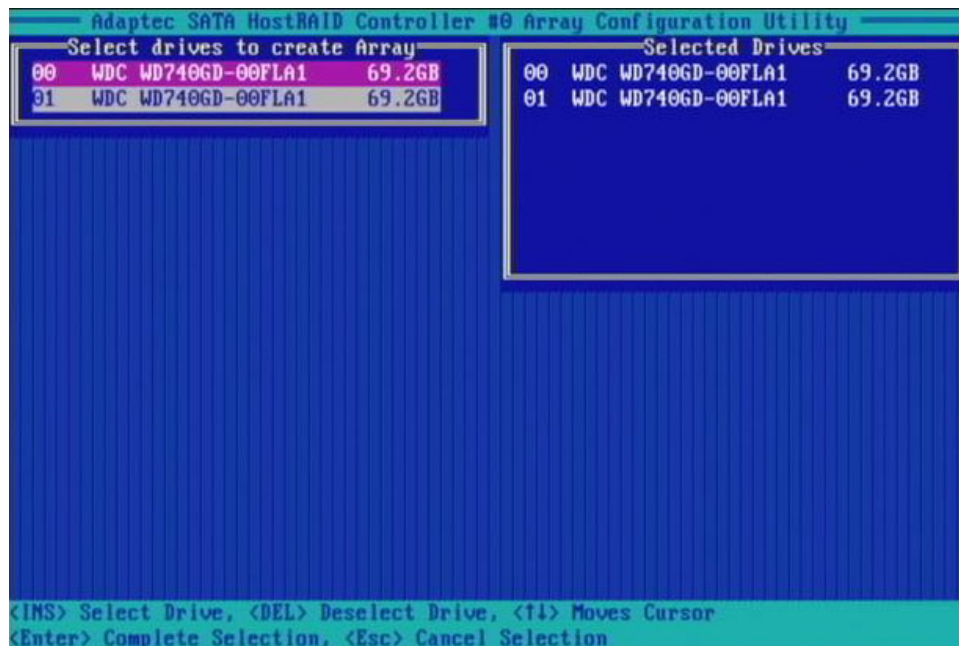
4. Select the RAID type. Options are RAID 0 (Stripe) and RAID 1(Mirror).
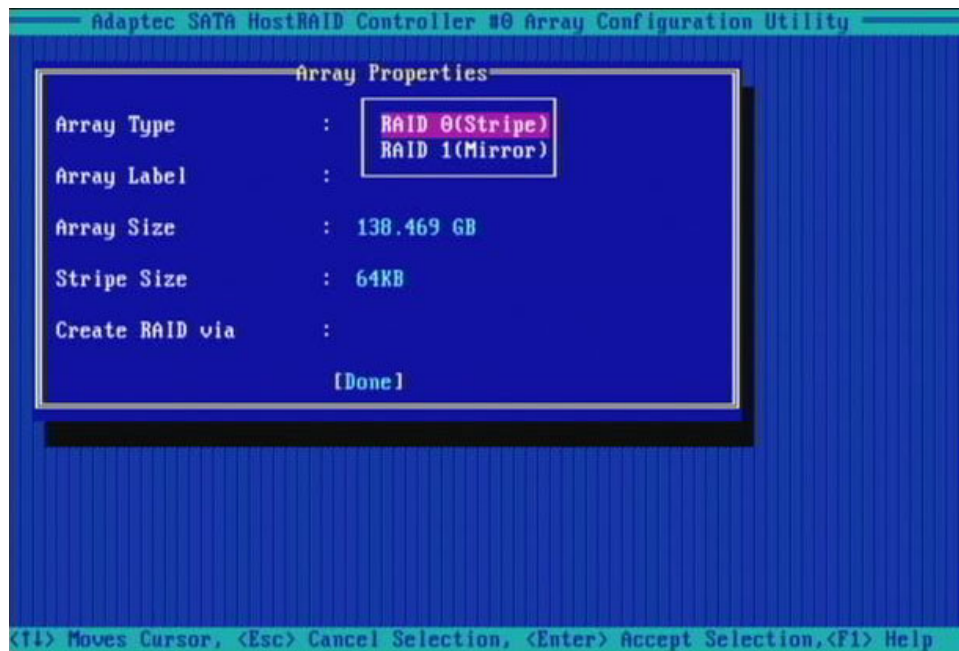
5. Choose a label for the RAID. This is the name that will identify the logical drive after the RAID is created.
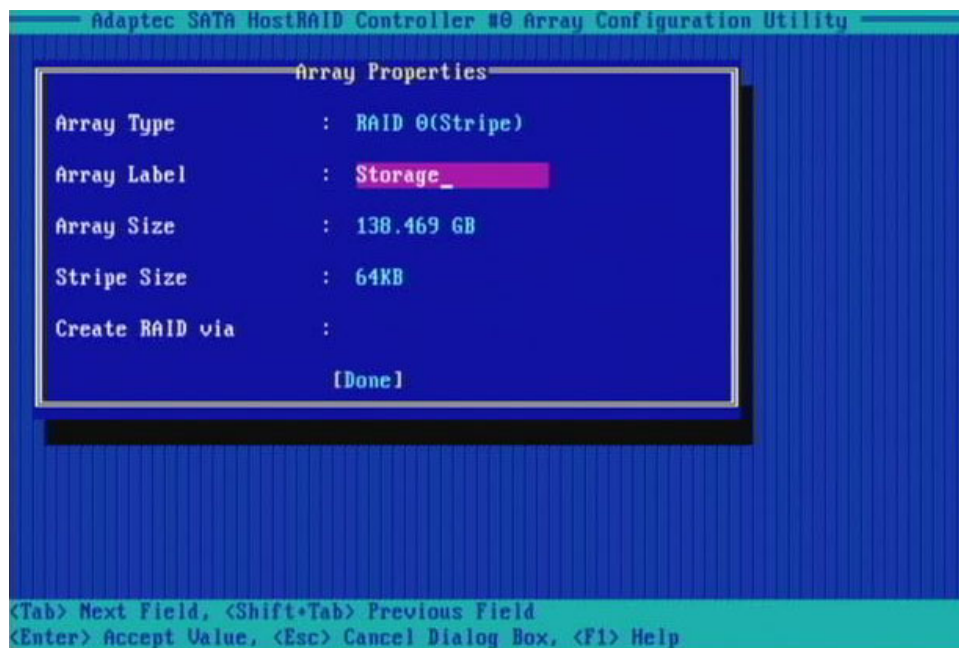
6. Select the strip size. Options are 16KB, 32KB and 64KB. The last one is recommended.
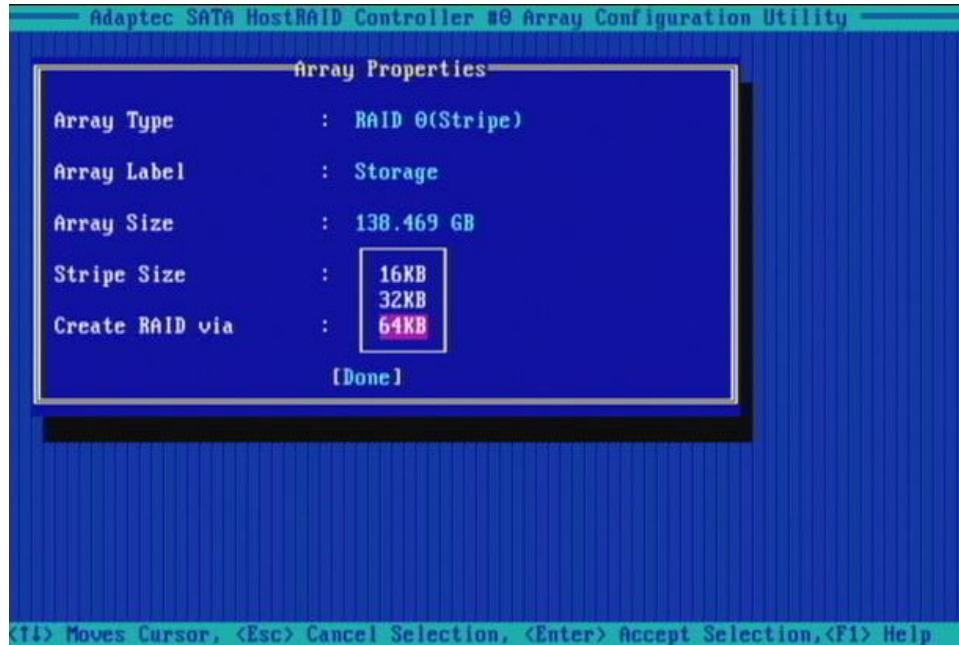
7. Select way in which RAID will be created.
 There are different methods for creating a RAID0 and RAID1 with the Adaptec Controller. The following table will explain each method:

RAID	Create RAID via	When to use
RAID0	No Init	Create RAID 0 on new drives
RAID0	Migrate	Create RAID0 from one blank drive and one with information that will be kept
RAID1	Build	Create RAID1 with one blank drive and one with information that will be kept
RAID1	Clear	Create RAID1 with blank drives or with used but with information that will be deleted
RAID1	Quick Init	Create RAID1 with new drives, fastest method

Array Properties

Array Type	:	RAID 0(Stripe)
Array Label	:	Storage
Array Size	:	138.469 GB
Stripe Size	:	64KB
Create RAID via	:	**No Init**
		Migrate
	[D	

Array Properties

Array Type	:	RAID 1(Mirror)
Array Label	:	Storage
Array Size	:	69.219 GB
Stripe Size	:	N/A
Create RAID via	:	**Build**
		Clear
	[D	Quick Init
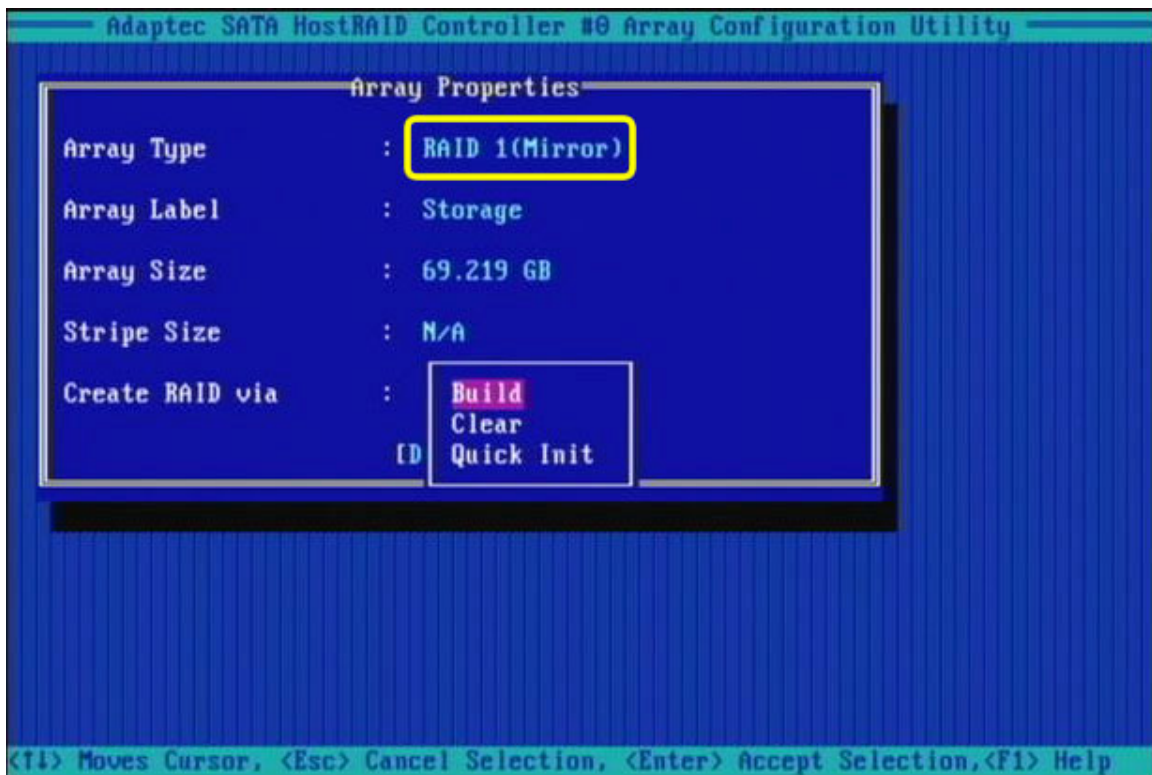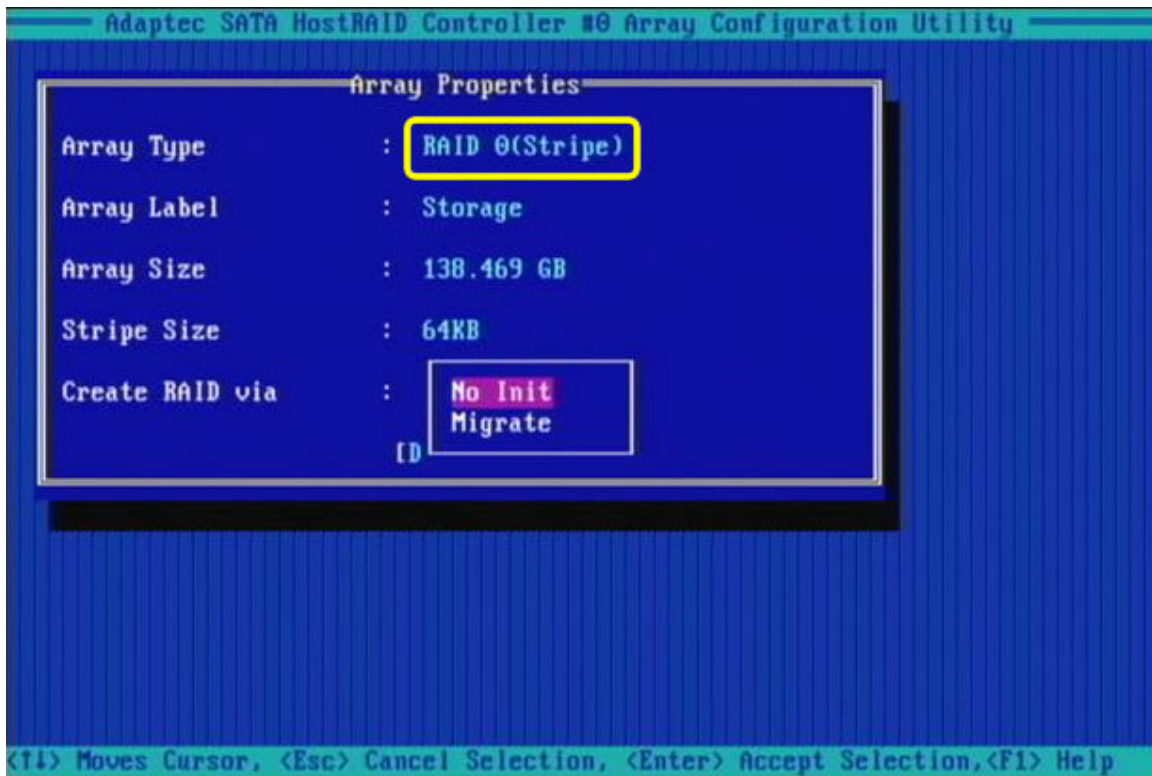
8. Enter to create RAID
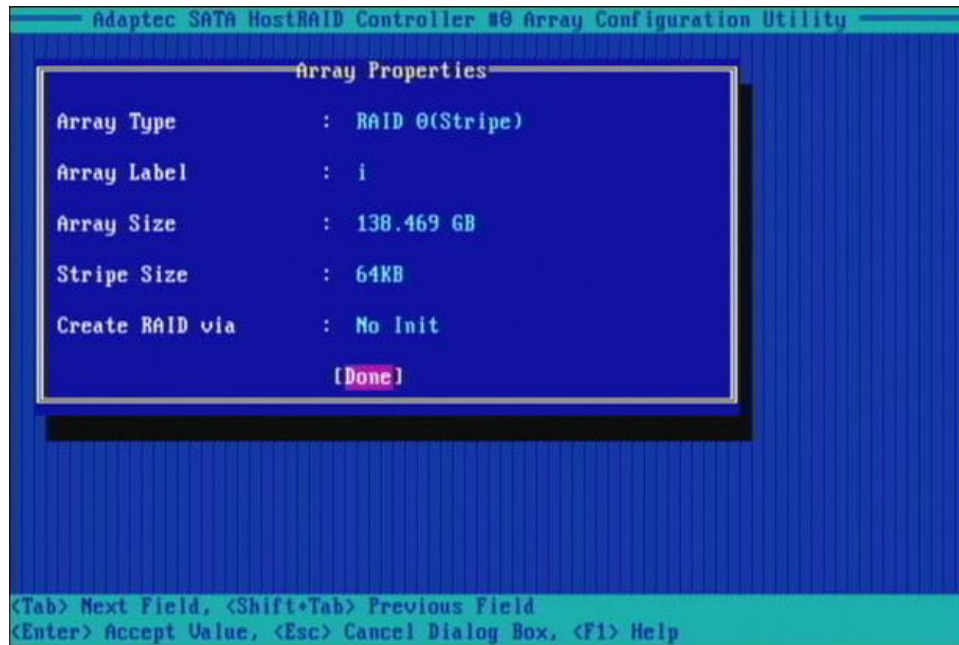
5.3 Delete RAID

1. Enter the Array Configuration Utility

2. Select the Manage Arrays option from the menu. This will list the arrays detected.
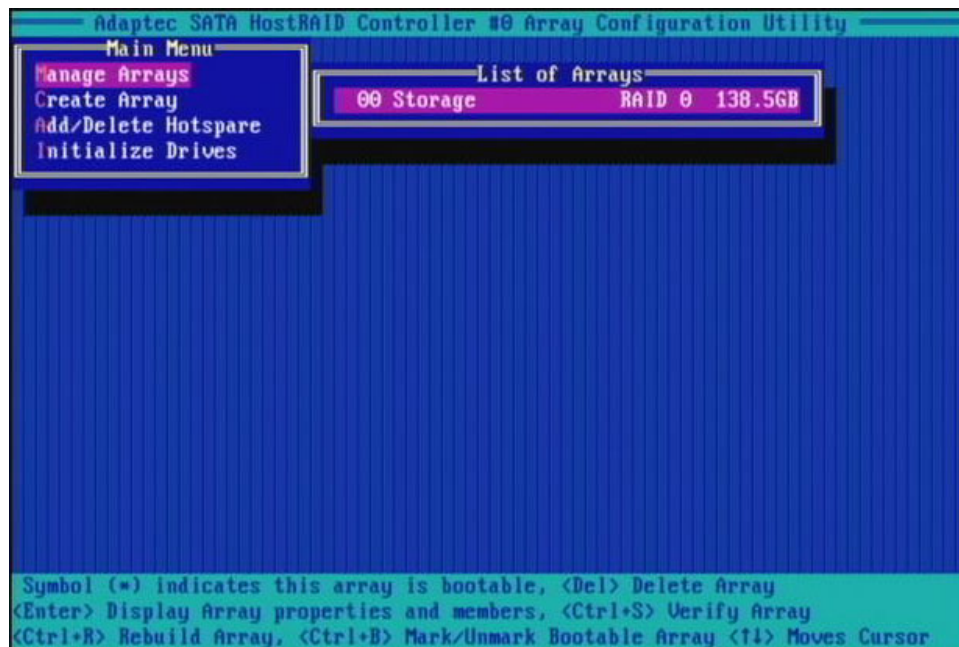
3. Once the array that will be erased is highlighted, press DEL to delete it.

4. Use arrow keys to highlight the Delete option and press Enter.
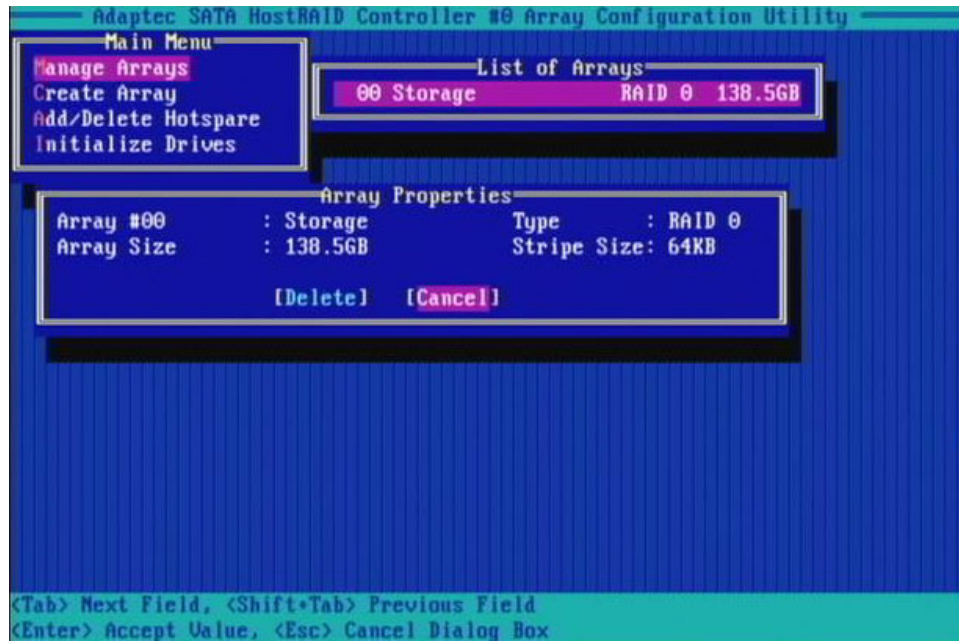
5. Press Y to confirm elimination.
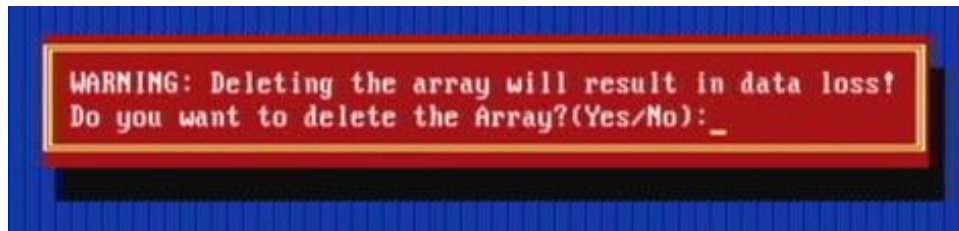
5.4 Format a disk

1. Select disk utilities

2. Select the drive that will be formatted
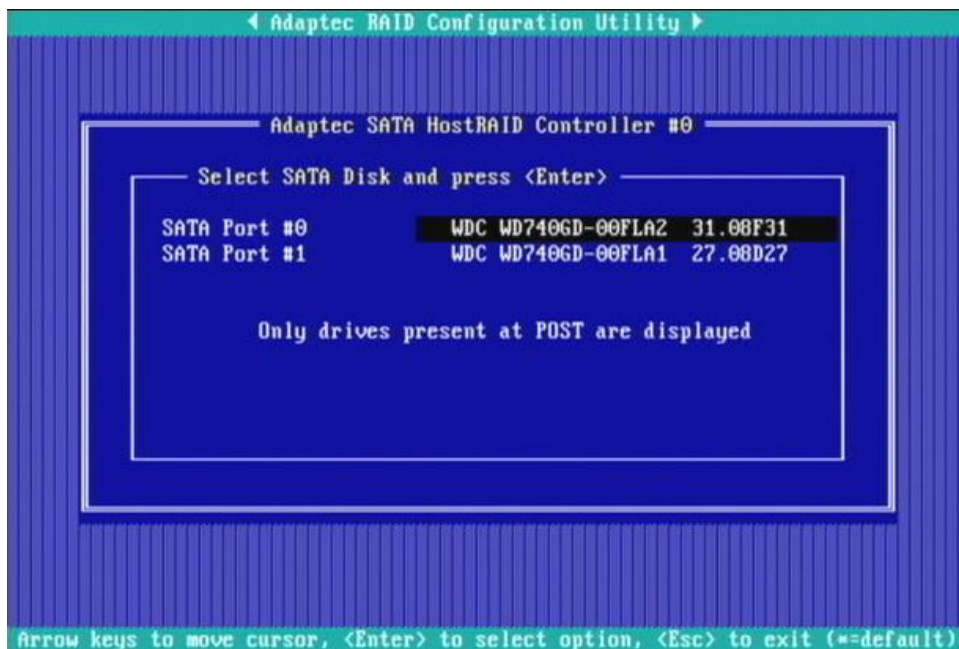
3. Select format drive option
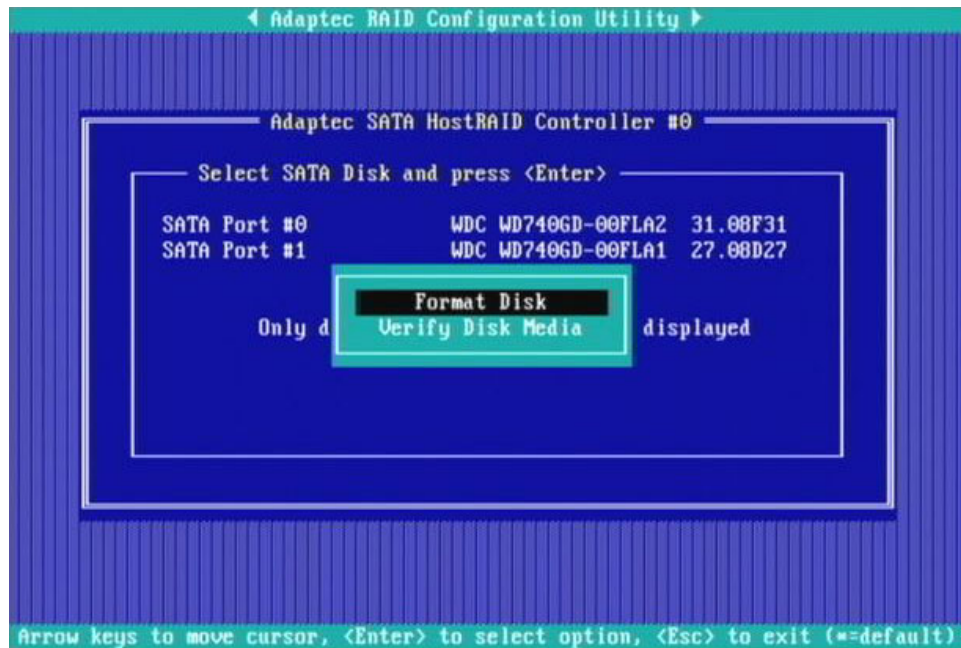
4. Highlight option Yes and press enter to confirm the format process.
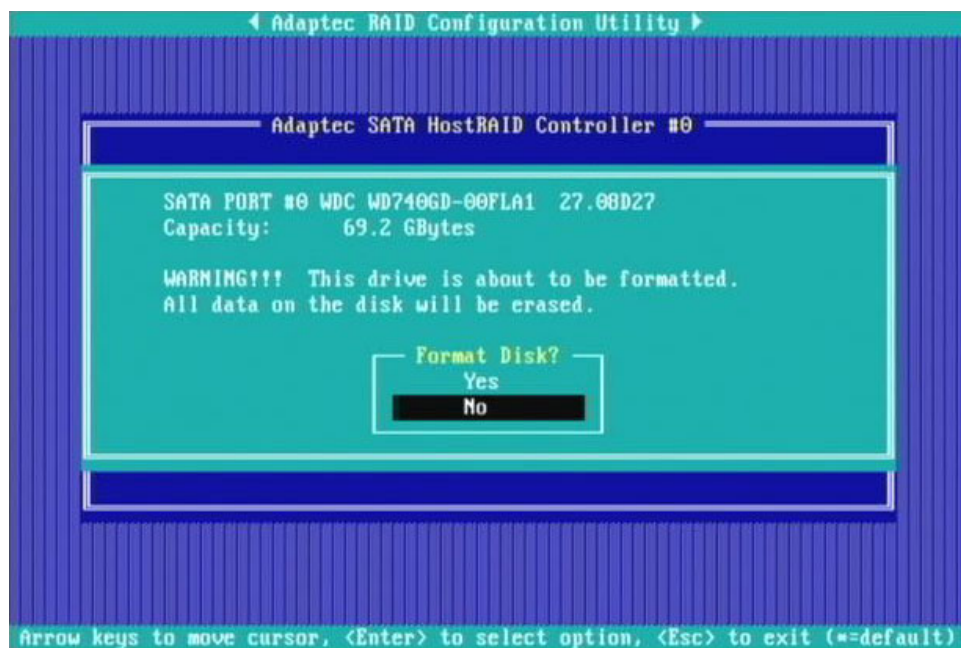
5.5 Verify Disk integrity

1. Select disk utilities

2. Select the drive that needs to be checked
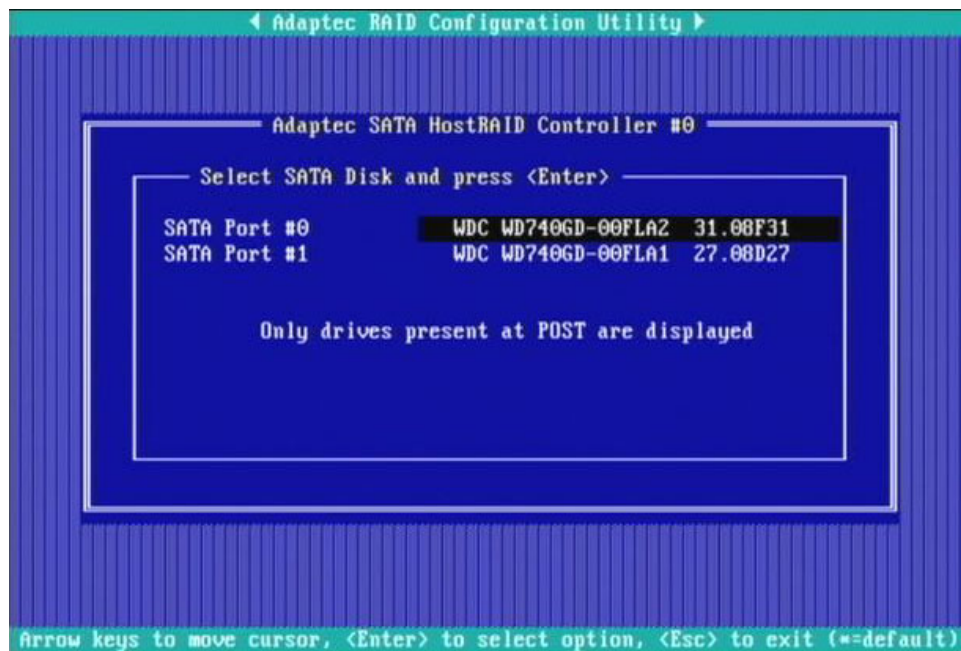
3. Select the Verify Disk Media option
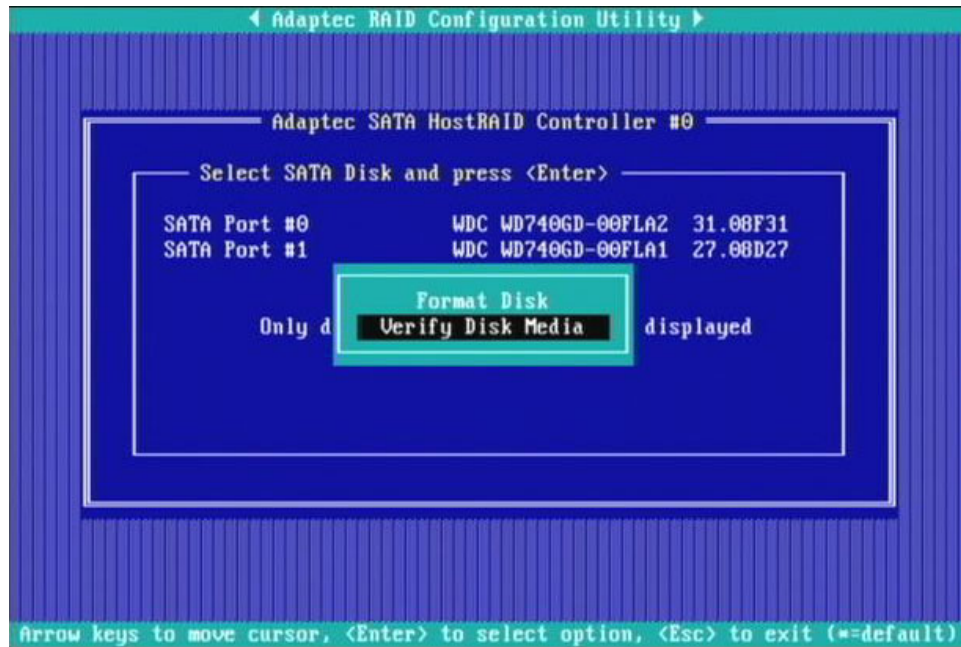
4. Highlight option Yes and press Enter to confirm verification
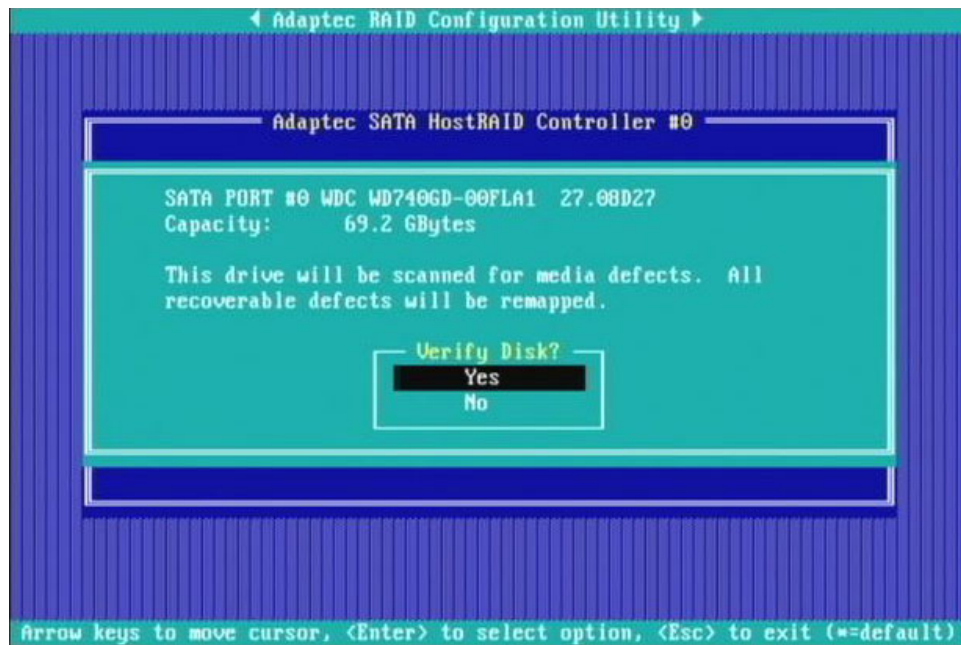
Chapter 6: SoundMAX Control Panel

6.1 Starting up

The Alienware X2 motherboard features onboard Intel Audio with support for 5.1 speaker configuration. This speaker configuration and other advanced sound settings can be configured through the SoundMAX Control Panel. This chapter will explain how to use this control panel.

The SoundMAX Control Panel is installed on the system when the onboard sound driver is installed. Once the installation is complete, and the computer has been rebooted (installation setup will prompt for a necessary reboot), there are three ways in which the control panel can be loaded.

1. Start menu
   Open the start menu and go to All Programs>SoundMAX>SoundMAX Control Panel.

2. Tray icon
   After the driver is installed the SoundMAX icon is added to your system tray. The quick launch menu can be accessed when this icon is right-clicked.

   Click on the SoundMAX Control Panel (the first one on the list).

3. Control panel
   Besides an icon on the system tray, another icon is added to the control panel. When double-clicked, the SoundMAX Control Panel is opened.
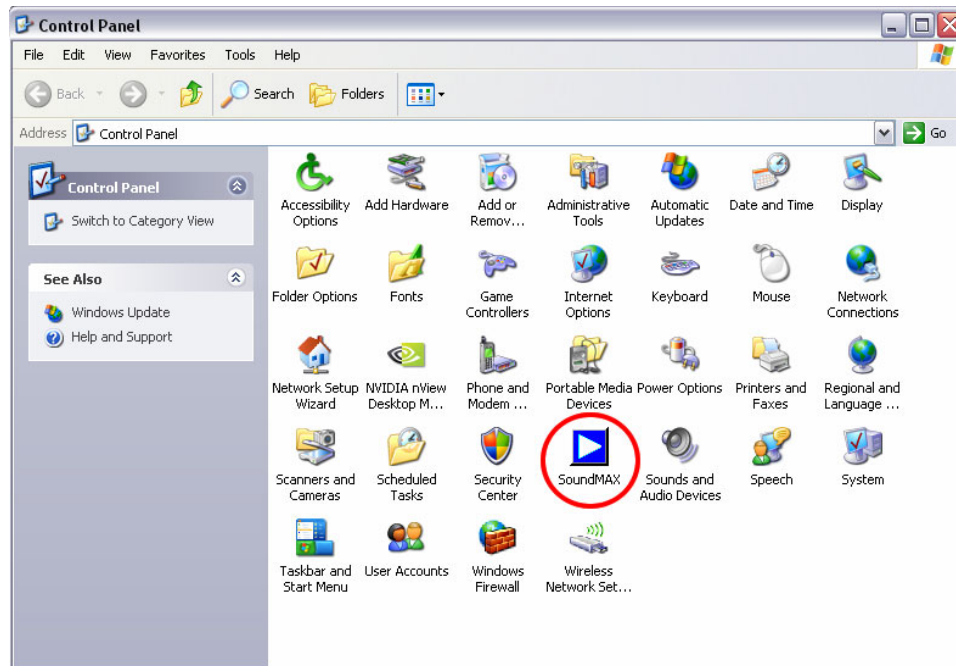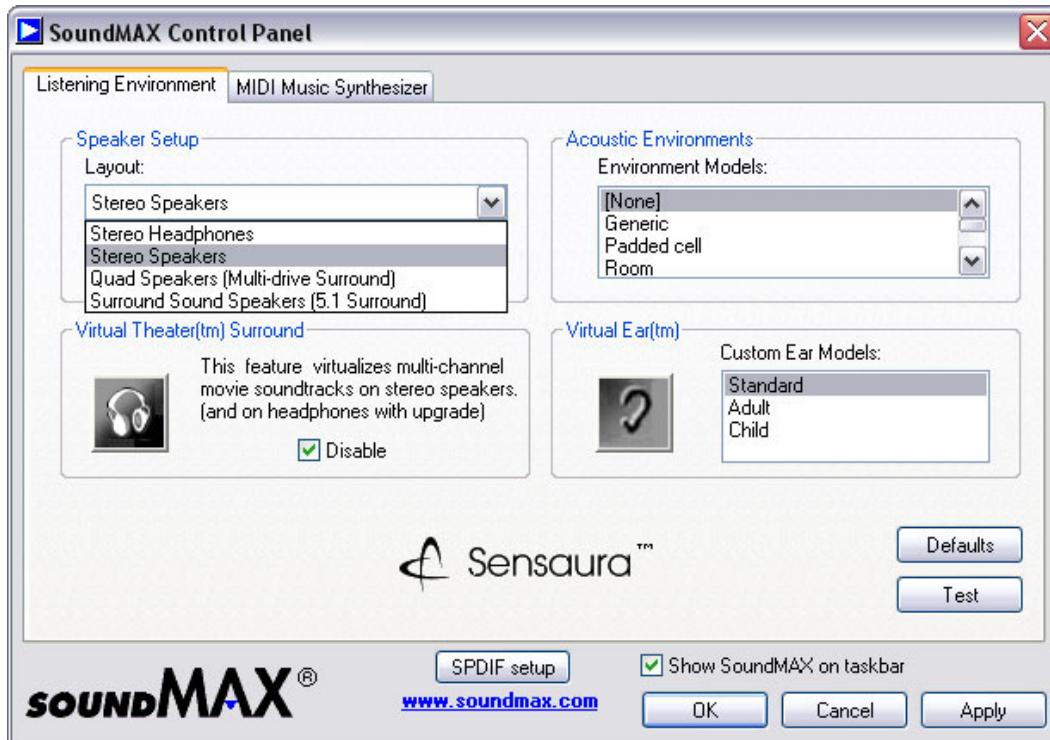
6.2 Sound configuration

6.2.1 Speaker Setup

The speaker setup can be configured under the Listening Environment tab as shown below:

As can be seen in the image above, there are four speaker settings:

> Stereo headphones:
> Only left and right channels are used.
> Stereo speakers:
> Uses left and right channels. When this mode is selected the Front Speaker Location can be toggled between Close Together and Far Apart. Close Together is optimized for two speakers that are close to the monitor. Far Apart optimizes sound for speakers away from the monitor, such as a home stereo system. The other speaker setup configurations don't support this feature.
> Quad Speakers (Multi-Drive Surround):
> Uses left, right, back left and back right channels.
> Surround Sound Speakers (5.1 Sound):
> Uses left, right, center, back left and back right channels.

6.2.2 Virtual Theater Surround

This feature virtualizes multi-channel movie soundtracks on stereo speakers. Extra virtual speakers are created to imitate a 4 or 5 speaker setup. This feature can be enabled or disabled.

6.2.3 Acoustic Environments

The Acoustic Environment will simulate listening spaces where sounds and music are played. Sound will be modified as if it was immersed into one of these environments.
The options to chose from are: None, Generic, Padded cell, Room, Bathroom, Living room, Stone room, Auditorium, Concert hall, Cave, Arena, Hangar, Carpeted hallway,

Hallway, Stone corridor, Alley, Forest, City, Mountains, Quarry, Plain, Parking lot, Sewer pipe, and Underwater.

6.2.4 Virtual Ear

This feature will customize the ear model so that it is tailored to a specific listener: it will simulate the ear of the listener. Three generic Virtual Ears are provided: Standard, Adult, and Child. SoundMAX gives the possibility of purchasing a Virtual Ear Upgrade to create custom virtual ears.

6.2.5 Testing speaker setup

SoundMAX control panel provides a utility to test each speaker and channel individually. This can be easily done by clicking on the Test button on the bottom right section of the Listening Environment Tab. It is important to note that the speaker configuration that will be tested is the one that was last applied, not necessarily the one that is currently selected.
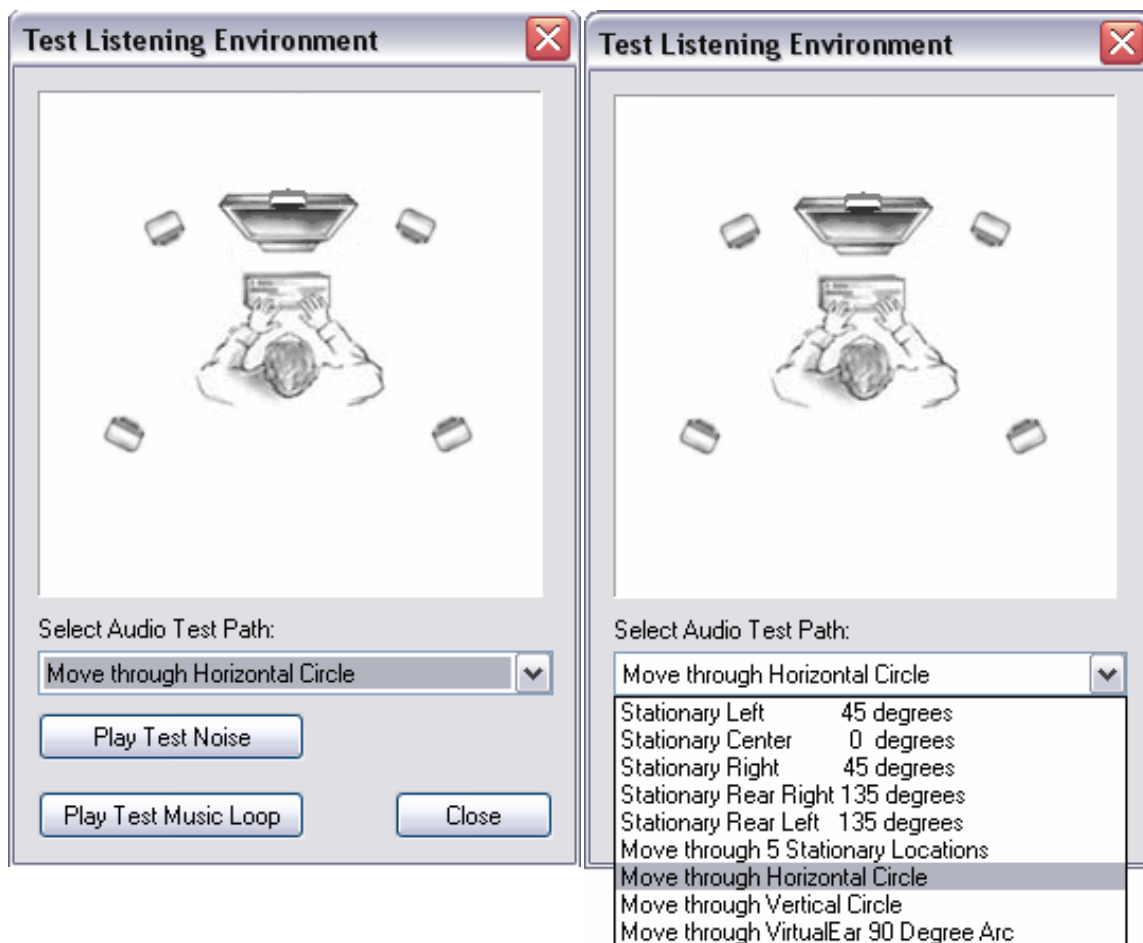

The test is performed when an Audio Test Path is selected and either Play Test Noise or Play Test Music Loop is clicked. Once this happens, a black ball will follow the Audio Test Path and each speaker close to the ball will emit either a noise or a music loop.
As mentioned before, the Audio Test Path selected will determine which path the small black ball will take.

The *test noise* refers to a static noise that will come through the specified speaker. The *test music loop* is a prerecorded sound file that outputs through the specified speaker.
The amount of speakers being tested depends on the speaker configuration that was last applied.
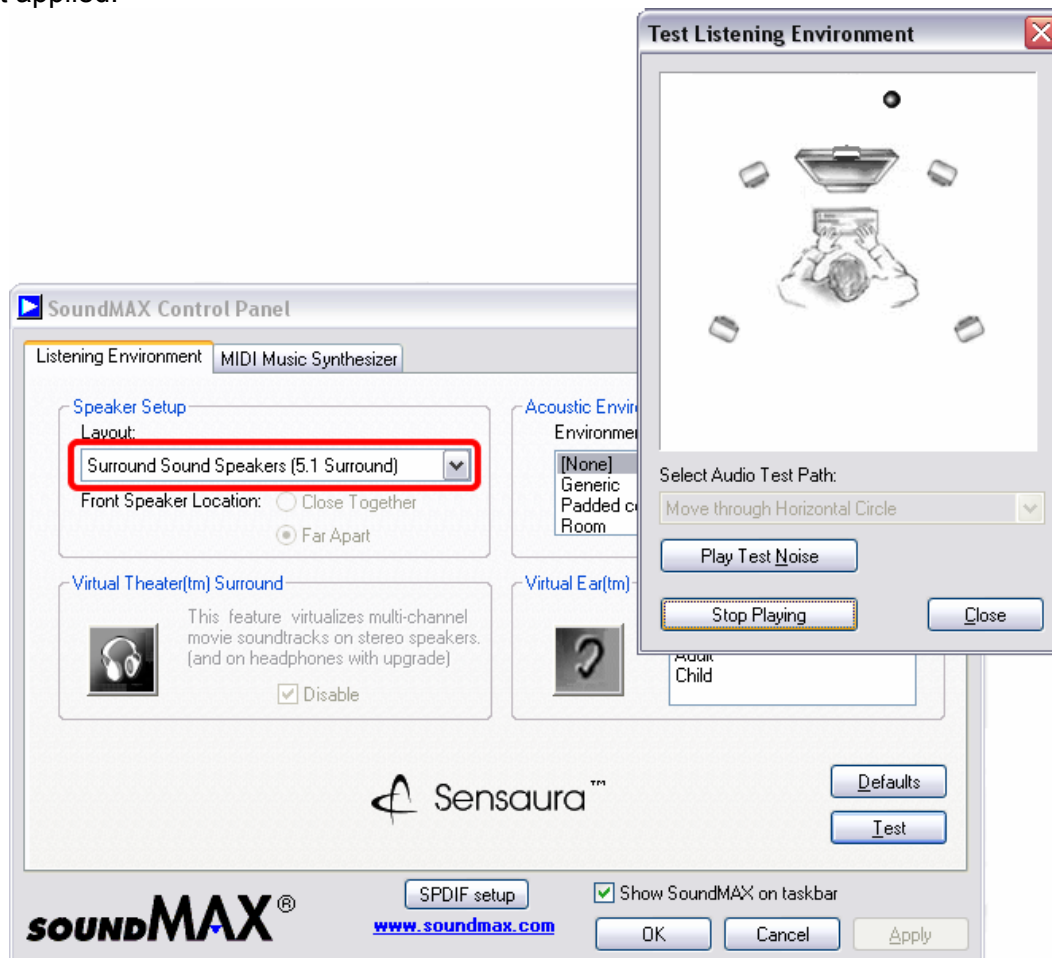
6.2.6 SPDIF

When clicking on the SPDIF setup button located on the center bottom of the window, the Advanced Controls for Volume Control window is opened. In this screen it can be selected if the system will support AC3 and/or PCM SPDIF formats.
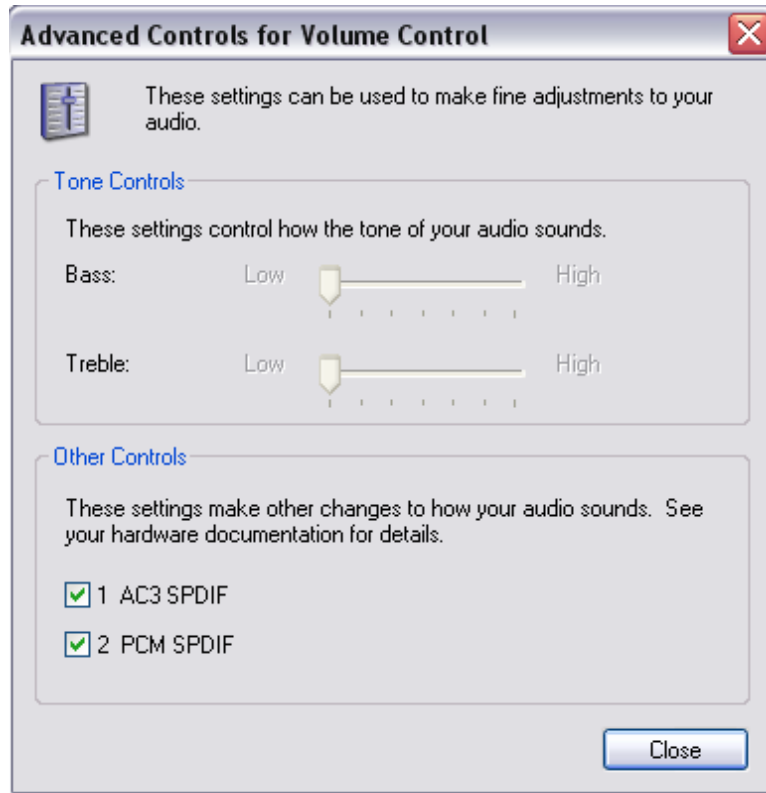
6.3 MIDI Music Synthesizer

The SoundMAX Control Panel features MIDI playback. When selecting the MIDI Music Synthesizer tab, the Synthesizer Default Sound Set can be modified.

General MIDI describes a specific MIDI format with 128 sounds and a drum kit. Most of the MIDI content will be compatible with this format. The **SoundMAX General MIDI** is a 4MB sound set allows compatibility with this standard.
XGlite MIDI describes another MIDI format usually related to Yamaha devices. **SoundMAX XGLite** is a 1.2 MB sound set that allows compatibility with this standard.

6.4 DLS loader

DLS stands for DownLoadable Sounds. This feature allows downloading custom sound sets in to the SoundMAX synthesizer and playing these files using the Windows Media Player. Simply browse for the MIDI or .RMI file, open it, and run it on the Media Player.